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# An exploration of attrition, retention, and predictors of success in associate degree nursing programs.

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AN EXPLORATION OF ATTRITION, RETENTION,  
AND PREDICTORS OF SUCCESS IN ASSOCIATE DEGREE NURSING  
PROGRAMS

A Dissertation Presented

by

EILEEN NEVILLE

Submitted to the Graduate School of the  
University of Massachusetts in partial fulfillment  
of the requirements for the degree of

DOCTOR OF EDUCATION

May 1993

School of Education

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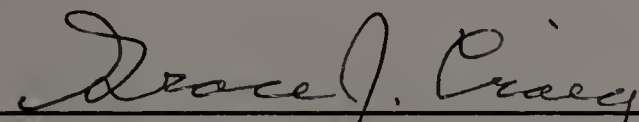
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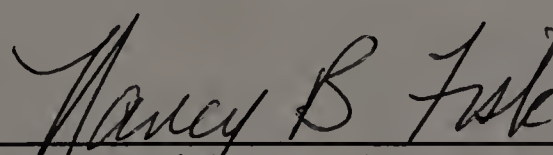
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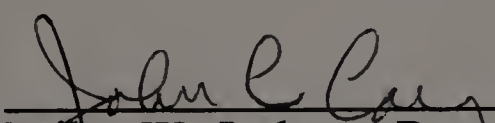
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## ABSTRACT

### AN EXPLORATION OF ATTRITION, RETENTION, AND PREDICTORS OF SUCCESS IN ASSOCIATE DEGREE NURSING PROGRAMS

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With vacancies in the roster of registered nurses increasing, and the number of graduating nurses dropping, there is a clear need to improve not only recruitment, but retention and success rates in nursing programs. This study surveyed directors and former students of associate degree nursing programs in Massachusetts on their perception of factors affecting attrition and retention of students in these programs, as well as on what measures assist nursing students to pass the registered nurse licensing examination. It is anticipated that the results will be useful in developing steps to limit attrition and promote retention in nursing programs.

The annual reports of nursing directors to the state Board of Registration in Nursing were reviewed. In a pilot study, the state's 15 community college nursing directors were surveyed on nursing student attrition and retention.

A random sample of 115 nursing program students, provided by the directors of two rural schools and two urban schools, was surveyed by questionnaire. This group included 1) those who left or failed a nursing

program; 2) those who succeeded in a nursing program and in passing the licensing examination; and, 3) those who succeeded in the nursing program but failed the licensing examination.

Frequency tables were used to tally responses and determine rank order. What percentage of the total sample chose a particular response and the weight each response was assigned by respondents is also given.

The questionnaire responses of the nursing program directors and the former nursing students on attrition, retention and success on the national examination were compared, as were also the responses from the rural and urban area schools.

The three major reasons for attrition are 1) family responsibilities and the stress of juggling home life and school; 2) failure in nursing courses; 3) inadequate finances. Peer study groups, positive and caring faculty, concerned advising, completing non-nursing courses prior to taking the nursing curriculum, and an orientation that informs students about the nurse's role and teaches time and stress management, were considered critical to retention.

Recommendations for nursing education, practice, and research, based on the conclusions from this study, are offered.



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## CHAPTER I

### INTRODUCTION

Eleven percent of the positions for registered nurses available in the United States are vacant (Haase,1990). Despite this high level of vacancies, nursing programs nationally are producing fewer and fewer graduates. The National League for Nursing reports that approximately 82,075 nurses graduated in 1985, 77,027 in 1986, 70,561 in 1987 and only 64,839 in 1988. The numbers of graduating nurses dropped by 18,136 over this four-year period. See Table 1.

Not only are the numbers of graduated nurses decreasing, so also are initial enrollments in nursing programs. Long the 'owners' of this profession, women now have many more work options available to them. All this makes retention of nursing students crucial to being able to supply more nurses. However, in the midst of a national nursing shortage and a decrease in nursing admissions, attrition rates for all basic nursing programs are high, sometimes as high as one-third of an entering class (Rosenfeld,1989).

Forecasts for the year 2000 suggest many changes for all of higher education, including changes in the population it will serve (Parnell, 1990). Among the changes already surfacing are that the numbers of racial and ethnic minority students will significantly increase, more adults and veterans will return to college for upgrading and retraining, and part-time college attendance will



increase . Because of economic pressures the largest student growth will continue to occur in lower-cost institutions, namely the community colleges. In 1990, this nation's community, technical and junior colleges enrolled an impressive 51 percent of all first-time college freshmen (Parnell, 1990).

Most associate degree nursing (ADN) programs operate within community college systems and are already experiencing the changes mentioned above, as evidenced by reports from The National League for Nursing. For 1988, the League reported 792 ADN programs in the United States.

The traditional bachelor or diploma nursing programs had attracted, and continue to attract, eighteen-year-old, middle class, unmarried female entrants. The ADN programs, however, attracted a different student, whose ages ranged from 16 to 59; 14% were over 26 years old. Of the 1989 ADN students 12% were married, 3% were divorced, widowed or separated, 8% had children, and three of every hundred students were male (Hasse, 1990).

The National League for Nursing reported for 1988 that 54.9% of all the basic registered nurse programs in the United States were associate degree programs, making them the largest provider of nurse graduates. Table 1 presents the numbers of nurses educated in the three types of nursing programs for two decades. As can be seen, from 1969 to 1972, the greater number of nurses graduated from diploma schools. However, as of 1973, associate degree nursing programs established in community college settings began to produce the greater number of nursing graduates. This trend reached its peak in 1984 when associate degree graduates numbered as many as 44, 394. After 1984, even with reduced numbers ADN programs graduate more nurses than baccalaureate or diploma school nursing programs.

Table 1								
Percentage Change in Basic RN Programs from Previous Year by Type of Program: 1969 to 1988								
ACADEMIC YEAR	ALL BASIC RN PROGRAMS		BACCALAUREATE PROGRAMS		ASSOC. DEGREE PROGRAMS		DIPLOMA PROGRAMS	
	Number of Graduates	Percent Change	Number of Graduates	Percent Change	Number of Graduates	Percent Change	Number of Graduates	Percent Change
1968-69	41,801	+ 1.3	8,355	+17.1	8,578	+39.2	24,868	-11.0
1969-70	43,103	+ 3.1	9,069	+8.5	11,483	+33.9	22,551	-9.3
1970-71	46,455	+7.8	9,856	+8.7	14,534	+26.6	22,065	-2.2
1971-72	51,304	+10.4	10,968	+11.3	18,926	+30.2	21,410	-3.0
1972-73	58,861	+14.8	13,055	+19.0	24,497	+29.4	21,329	-0.4
1973-74	67,061	+13.9	16,957	+29.9	28,919	+18.0	21,185	-0.7
1974-75	73,915	+10.2	20,170	+18.9	32,183	+11.3	21,562	+1.8
1975-76	77,065	+4.3	22,579	+11.9	34,625	+7.6	19,861	-7.9
1976-77	77,755	+0.9	23,452	+3.9	36,289	+4.8	18,014	-9.3
1977-78	77,874	+0.1	24,187	+3.1	36,556	+0.7	17,131	-4.9
1978-79	77,132	-1.0	25,048	+3.6	36,264	-0.8	15,820	-7.7
1979-80	75,523	-2.1	24,994	-0.2	36,034	-0.6	14,495	-8.4
1980-81	73,965	-2.0	24,370	-2.5	36,712	+1.9	12,903	-11.0
1981-82	74,052	+0.1	24,061	-1.2	38,269	+4.3	11,662	-9.5
1982-83	77,406	+4.5	23,855	-0.9	41,849	+9.3	11,704	+0.2
1983-84	80,312	+3.8	23,718	-0.6	44,394	+6.1	12,200	+4.2
1984-85	82,075	+2.2	24,975	+5.3	45,206	+1.8	11,892	-2.5
1985-86	77,027	-6.2	25,170	+0.8	41,333	-8.6	10,524	-11.5
1986-87	70,561	-8.4	23,761	-5.6	38,528	-6.8	8,272	-21.4
1987-88	64,839	-8.0	21,504	-9.5	37,397	-2.9	5,938	-28.2

As a context for this study it is useful to understand the current situation of nursing programs in Massachusetts. To further clarify the purpose of the study, the experience of attrition in the writer's own institution will also be described.

### Statement of Problem and Purpose

Massachusetts, as of 1991, had 14 baccalaureate degree (BSN) nursing programs, 11 diploma school nursing programs and 16 associate degree (ADN) nursing programs. The ADN programs are located at the 15 state-supported community colleges and a city-supported college. The changed student characteristics predicted by Parnell (1990) for higher education in the year 2000, which included single parents, returning adults, males and people of low income are already present in these Massachusetts programs. Recent data shown in Table 2 reflect the changing population in nursing programs, and show also that there were significant minority enrollments in the Massachusetts ADN programs.

Although the ratio of non-traditional nursing students to traditional students is rapidly rising, there has been a decrease in total enrollments in all basic RN programs (see Table I) accompanied by an increase in the rates of attrition from those programs. National League for Nursing data shows that Massachusetts' enrollment in both public and private nursing programs has also declined. In 1979, there were 8,949 enrollments in basic nursing programs (NLN 1989). Enrollment in all nursing programs for the class of 1989 numbered 3,394 candidates. The dramatic decrease represents a greater than 50% loss of nursing candidates entering RN programs.

To summarize, there continues to be a dramatic decrease in enrollments in nursing programs, not only in Massachusetts, but nation-wide. Further, it is apparent that more registered nurses will be educated in the community college nursing programs than in other institutions. Their student population is now, and will increasingly be, remarkably diverse.



<p><b>Table 2</b></p> <p><b>1987-1988 Admissions for Massachusetts Nursing Programs</b></p>			
	ASSOCIATE	DIPLOMA	BACHELOR'S
PROGRAMS REPORTING	16	11	14
TOTAL ADMISSIONS	1286	348	715
MALES	63	14	41
BLACKS	111	16	38
HISPANICS	18	1	14
ASIANS	11	3	5
AMERICAN INDIANS	2	0	0

(Rosenfeld, NLN, 1989)



The needs of these students may be different from those of the traditional student. Attrition as high as 30% in nursing programs, at a time of a nursing shortage and a fiscal crisis, shows the importance of locating the reasons for such attrition. Further this situation shows the need to search for and disseminate information about measures that would succeed in improving the retention of those students.

The purpose of this study, then, was to identify and prioritize the reasons for attrition from the ADN programs located at the 15 state-supported community colleges so that effective steps might be taken to limit this attrition. This information might be of use to all nursing programs and would certainly be of great interest to the community colleges. The study was accomplished by surveying those most closely involved.

### Overview of Research Design

In approaching this problem, several steps were taken. The records of the nursing students at the writer's own institution were examined; data about the attrition figures in all Massachusetts' ADN programs were reviewed. A search of the literature concerning attrition and retention in nursing programs across the nation was conducted. Based on the knowledge gained from this experience, an exploratory study was designed which surveyed the chairs of the Massachusetts ADN programs about attrition and retention. The final stage of the design involved surveying nursing students, both those who succeeded and those who had failed, to learn what their experience-based perceptions were. The goal of the total study was to identify steps to be taken in order to retain future ADN students in this state.

The background of the exploratory study, and of the researcher's experience with this problem, is described below.

## Background

As director of a Western Massachusetts associate degree nursing program for 11 years, I have been aware of the attrition rates in this nursing program. High attrition caused a great deal of anxiety in the students and a sense of frustration and failure in the nursing faculty. Faculty frustration reached its peak in 1989 when only 41 nursing students graduated from the 80 freshmen admitted to the program in 1987. This attrition rate of nearly 50% disturbed faculty, students and administration. Even though our graduates' average passing scores on the National Council Licensing Examination (NCLEX) were consistently above the national average, many students had been lost in the process. We were beginning to feel that only the best of the best survived our nursing program. The bright student whose verbal and quantitative Scholastic Achievement Test (SAT) scores were well above the mean of 400, who was able to be a full-time student and did not need to earn money while in school, generally did very well in the program and passed the NCLEX exam. However, it seemed that the community college student of average intelligence who had to work more than twenty hours a week had little chance of success in the program. We also knew that some of the students who failed were clinically competent but weak in dealing with theoretical concepts and critical thinking. Many curriculum meetings centered on the question of what could be done to assist the average student toward successful completion of the nursing program and how the program should be restructured to that end.

Even before this re-examination, a considerable range of efforts had been made to assist our students toward success. As a beginning, students are required to take the Nelson Denny Test to determine reading ability, as well as English and math placement tests to determine if remedial work is needed.

Information about the curriculum is disseminated. The chairperson of the nursing program speaks to the pre-health students four times a year and any student of the college can easily have an appointment for information about the nursing program whose prerequisites include high school biology, chemistry, second year algebra and SAT scores of 450 or higher. A faculty advisor (elected by students) is available for both the freshmen and senior classes.

Creating community among the students is a major priority. An orientation is held each May for the incoming September freshmen, at which time the new candidates talk about the program in small groups with a faculty member. Students are given an orientation booklet answering the most frequently asked questions of the last ten years. The new students are introduced to the nursing and adjunct faculty on the first day. In October the senior nursing students give the freshmen a luncheon attended by nursing faculty, college faculty and college administrators. The president of the college personally welcomes the new nursing students.

Further, since the faculty felt that the quality of the students in the previous three years was not as strong, the matriculation policy was changed. Originally a student who failed a nursing course could not return to the nursing program. Presently a student who fails one nursing course can repeat, at faculty discretion, the failed course.

Finally, to assist students in preparation for the NCLEX exam, the students take all National League for Nursing (NLN) Achievement Tests and the NLN Comprehensive Exam. The faculty also conduct a one month review that includes a computerized three-hour simulated NCLEX RN exam.

However, even with this social and academic support and assistance, the attrition rate continued to be high. Some concerned faculty became interested in the concept that different students learn differently and began investigating



learning strategies. Herrmann (1982) had stated that graduate practicing nurses had Limbic Right Thinking Preferences involving interpersonal, emotional, musical, spiritual and communicating skills. These skills seem to be a dominant factor in nursing behavior. Herrmann's Left Thinking Preference involved planning, organizing, administrative and managerial skills. Since the main method of teaching in our nursing program has been the lecture, faculty asked if different teaching methods were needed for the left-brained and right-brained learner.

At the same time, Dr. George Leslie, a colleague at the college, engaged the nursing freshmen and senior students and faculty in a study to assess their thinking preferences (Brain Dominance Characteristics). He wanted to discern whether nursing students used either left- or right- oriented hemispheric learning strategies to successfully complete their nursing courses and in pursuit of this information administered a Herrmann Participant Survey Instrument to all the nursing students and faculty.

Leslie (1987) found no significant differences between left or right thinking preferences among the nursing students or faculty. For male students, 43 percent had left-, and 57 percent had right-oriented thinking preferences, and among the female students, 45 percent had left-, and 55 percent had right-oriented thinking preferences. The nursing faculty split evenly, 50 percent with left-oriented and 50 percent with right-oriented thinking preferences. This remarkably even distribution seemed to the faculty to lessen the possibility that learning style differences were a prime cause of student failure.

The effort by faculty to improve retention techniques continued. Faculty attended test construction seminars, attempted a more positive approach with students, offered after-class sessions for discussion of material, and even brought refreshments to students before final exams.



In 1988, Dr. Anthony Gregoric came to the campus to describe his work on Mind Styles, which he divides into Concrete Sequential, Concrete Random, Abstract Sequential, and Abstract Random mind styles (Gregoric 1979). The nursing faculty were administered a self-assessment instrument for adults entitled "Gregoric Style Delineator." Again there was an even distribution among faculty between random and sequential teacher/learner styles. This self-assessment actually relieved some faculty frustration concerning choice of teaching methods as well as providing them with more understanding of their own thinking and learning behaviors. (In curriculum meetings it was said that if you needed more information, you were a sequential and if you did not know what you were doing, you were a random.)

#### The First Stage: the student records

In the Fall of 1989, I gathered data on our nursing classes of 1989, 1990 and 1991, to see if any immediately obvious reasons for nursing student attrition could be found. The data included student scores from SATs, English and Math placement tests, the Nelson Denny reading test, and, for the graduate class of 1990, the NLN Achievement Test Score and also the pass or fail score on the NCLEX-RN exam.

After examining the data there was agreement that there were no clear-cut predictors of success in the nursing program. Indeed some cases defied the accepted wisdom concerning performance; for example, students with SATs in the 600's had left the program, while other students with SATs of 380 or below had passed both the nursing courses and the NCLEX exam.

Asked what measures might reduce the attrition rate, the faculty group made suggestions which indicate both their concern and the range of their perceptions of possible causation.

The faculty suggestions are listed as follows:

- counsel students not to work more than 20 hours per week;
- require pre-health students to take more than one college course in order to evaluate GPA, and potential for nursing;
- developmental English and Math courses must be lecture and not (as at present) self-taught;
- SAT's must be at least 400 Verbal, 400 Math;
- increase counseling service for students' personal and social problems;
- videotape seniors explaining the demands of the program for the enlightenment of potential and incoming students;
- design course study-guides to assist students coping with a great deal of information;
- incorporate application of knowledge in the classroom;
- encourage study groups among peers;
- design a pilot project summer course to include assertiveness training, relaxation techniques to decrease test anxiety and a time management plan for each student entering the nursing program.

### The Second Stage: the records of similar institutions

Given the information we now had about our own students, it seemed wise to examine the experiences of other associate degree programs. The Board of Registration in Nursing permitted an examination of the Annual School Reports of the fifteen community colleges of Massachusetts. Within this Annual Report, Form 75 lists reasons given for student withdrawals. Table 3 shows these reasons in rank order.

It is difficult to generalize about the data collected from Form 75 because the wording of the form is vague and no definitions of its categories are given. 'Personal' could mean many things and 'family responsibilities' would certainly be interpreted differently by different reporters. Given this limitation, however, some noteworthy information was obtained. In that five year period, at least 1582 nursing students in the fifteen community colleges had left nursing. If 'dislike of nursing' and 'change of career' are factored out, there are still 1294 students lost

mainly in the first year of their nursing studies. In other words, approximately 86 potential associate degree nurses in Massachusetts leave one or another of the fifteen associate degree nursing programs per year.

Combining the reasons for attrition reveals that the number one reason is academic failure, more pronounced in the first and second semester, less so in the third semester, and nonexistent in the fourth semester. A high rate of failure

<b>Table 3</b> <b>Rank Order of Reasons for Nursing Student</b> <b>Attrition in Fifteen Community Colleges,</b> <b>1985 - 1989</b>	
1	Failure
2	Personal
3	Health
4	Career Change
5	Dislike Nursing
6	Family Responsibilities
7	Financial
8	Academic Work Overload
9	Withdrawal
10	Moved from Area
11	English a Second Language
12	Unsuited for Nursing

(Summary from Form 75, Annual School Reports,  
Massachusetts Board of Registration in Nursing, 1990)



in the first two semesters is significant in view of the fact that the fifteen associate degree nursing programs being examined have rigid and differing entry requirements. This suggests either that entry requirements do not hold the key to the problem or that the necessary capabilities are not being screened for .

### Research Issues

The initial hypothesis was that locating the major causes of attrition would point to the steps needed to improve retention, and the task at hand was clearly that of widely-based exploratory research into the factors leading to attrition.

Attrition is defined here as either failure or withdrawal from a program.

Retention is defined as successful completion of both the nursing program and the NCLEX RN examination. A major assumption of this study is that the experience of both sets of participants, the nursing educators and the nursing students, is the single most reliable source of information on attrition and retention. A further assumption is that the two sources will not provide identical perceptions.

A review of the literature to discover what other researchers had reported on the questions of attrition and retention for nursing programs is described in the next chapter.



## CHAPTER II

### REVIEW OF LITERATURE

The retention efforts at my own institution and the data from the other schools had clarified what was to be sought in a review of literature, namely studies concerned with the reasons for attrition in nursing programs. A second concern was for information about the efficacy of standardized tests or other data as predictors of success in a nursing curriculum. Among the candidates for the function of predictor were high school rank, Scholastic Aptitude Tests (SATs) science grade point average, nursing grade point average and National League for Nursing (NLN) Pre-Nursing Exams. Finally, the literature would be searched for information about measures that had succeeded in improving retention of students in nursing programs.

Two points must be kept in mind when reporting this research. The first is that there are three different basic nursing programs that prepare students for the NCLEX-RN exam: a two year community college-based associate degree program, a three year hospital-based diploma program and a four year university-based program. Generalizing results from one type of program to another has real limitations.

The second point to be kept in mind is that the NCLEX-RN exam was administered first in 1982. Before that time the State Board Test Pool Exam

(SBTPE), a group of five different tests, was administered to graduates. Thus, research findings before 1982 about predictors of success on the old SBTPE exam would not necessarily be predictors of success on the new NCLEX-RN exam.

For clarity, this literature review is organized as follows: (1) studies concerned with attrition in bachelor's programs, (2) studies involving attrition in associate degree programs, (3) studies on minority attrition and (4) studies reporting factors contributing to improved retention of nursing students.

### Predictors of attrition in BSN Programs

Most of the studies on attrition and retention have been on baccalaureate nursing programs. Because baccalaureate programs involve a longer preparation (four years) and a different population than the two year associate degree nursing programs which are the concern of this study, it was felt the findings might not be applicable to associate degree nursing. The hope in reviewing this research was to gather some identified variables for attrition and retention to use as guidelines for further literature review and development of this study. The studies found to be significant are described below.

Bachman and Steindler (1971) found that BSN students who remained in college had higher SATs and reading ability than those students who failed or withdrew. In another extensive study the highest predictor of freshmen nursing student success was considered to be an Aptitude Test for Nursing. The second highest predictor was the math SAT score, third was high school rank, the fourth, interestingly enough, was orderliness as a personal value and the fifth highest predictor was the verbal SAT score (Allchnic and Bellucci, 1989).

Whittmyer, Cambiscioni and Purdy (1971) studied 119 students from the Ohio State University School of Nursing using a combination of the American College Battery Test (ACT), the 16 Personality Factor Inventory, the Myers-Briggs Type Indicator, and the Pre-Nursing Point Hour Ratio. The ACT mathematics

usage and the Pre-Nursing Point Hour Ratio showed a statistically significant relationship with attrition.

In another study examining predictors of success within a four year nursing program, Burgess and Duffy (1969) found the single best predictor was the grade point average for the freshmen and sophomore year of college, before students entered the nursing curriculum in the third year.

Quick and others (1985) examined predictors of success on the national licensing exam (NCLEX), and found the grade point average at the end of the freshmen year of college along with grades in anatomy and physiology were directly related to performance on the NCLEX-RN exam.

Schoenfisch (1983) reported the grade point average in nursing courses plus the composite Scholastic Aptitude Test (SAT) scores were the two best predictors of NCLEX success.

Another successful predictor, according to Breyer (1984) is the National League for Nursing (NLN) Comprehensive Nursing Achievement Test.

Glick and others (1986) found the pre-nursing grade point average and the biology grade point average to be NCLEX success predictors. Other predictors such as high school rank, ACT scores, chemistry and biochemistry grades were reported as not significant to the success or completion of the baccalaureate nursing program.

Whitley's research (1986) suggests that the prenursing grade point average is a stronger predictor of NCLEX success than the Scholastic Aptitude Test (SAT).

In Florida, since 1982, legislation has mandated the use of the College Level Academic Skills Test (CLAST) to measure student achievement in college-level communication and computation skills and the exam is a requirement for admission to the junior year. When CLAST along with GPA, ethnicity and age were examined (Rush, Belock 1988) as predictor variables of academic success for



55 baccalaureate nursing students, correlations were found between CLAST performance and age. The older the student, the better the chances of success. Ethnicity or sex did not correlate.

Sharp (1984) recommends the GPA for nursing courses and scores in math and the natural sciences as predictors of success on the NCLEX exam. Harpin and Rose (1984) found the cumulative GPA to be the highest predictor of nursing students passing the licensing exam. Since some institutions interview all applicants in an effort to reduce attrition, David Stronck (1979) examined the effectiveness of interviewing potential nursing students before admission as a predictor of success. Following the interview of each candidate, faculty could allot a total of 20 points to five categories: (1) general impression, (2) life skills, (3) goals, (4) leadership skills and (5) general recommendation. The results of this study indicated that scores on the interview had a significantly negative correlation with academic performance and that interviewing potential nursing students was no guarantee for retention.

As had been suspected, for several reasons the research reported on to this point was not clearly useful. The samples are small. Differing measures are offered as predictors of success in nursing and success on the NCLEX-RN exam. And, not least, baccalaureate nursing programs involve a longer preparation and enroll a different population than do the ADN programs which are the focus of this study. As Rosenfeld (1989) indicates, BSN and diploma nursing graduates generally have a median age of 23, are single and without children while the majority of ADN graduates have a median age of 31, are married and have children.

#### Predictors of attrition in ADN programs

Although over 100 studies of nursing programs were located and reviewed, few examined associate degree nursing programs. However, a review



of research related to prediction of successful nursing performance from 1965-1975 that included an associate degree sample, was conducted at Ohio State University by Schwirian. Following this review, Schwirian administered a questionnaire on criteria for predicting successful performance in nursing to a representative national sample of 150 basic RN schools. The participating schools included 66 ADN schools, 50 diploma schools and 34 BSN schools. The most commonly used criteria for admission to nursing identified in this study were, in decreasing order: health data (physical examination), high school rank, high school grade point average, interviews with applicants and prior college grade point average. The only predictive measures in use by these schools were measures of cognitive attributes and achievement such as ACT, NLN Prenursing exams and the SAT. The schools affirmed that they considered these cognitive measures of little value in predicting clinical performance however. When evaluating students' clinical performance almost all respondents to the questionnaire reported using ratings of technical skills, problem-solving skills and assessment skills. The measure for learning theory most widely used was the teacher-made examination. Respondents were asked to list criteria necessary for success in nursing and the criteria most often cited (over 80 percent of the respondents) was academic achievement in nursing. The next two most often cited criteria were clinical performance and instructors' evaluations. These criteria were quite consistent both by program type and geographic region (Schwirian, 1976).

Berzon, a Nursing Chairperson at a community college in Massachusetts, did a similar study in 1983. She surveyed the fifteen public community college and the three private associate degree nursing programs in the state, examining attrition and retention of associate degree nursing students from 1976 to 1981. She also examined passing rates on the NCLEX exam. Her hypothesis was that the

ADN programs in Massachusetts have low attrition rates and that only programs admitting large numbers of minorities and high risk students have high attrition rates and lower passing rates on the NCLEX exam. Of 18 questionnaires, 12 were returned, a response rate of 66.67%. Berzon found that from 43.5% to 96% (with a mean of 77.38%) of students in these schools graduated in the five year period studied (1976-1981). The numbers who passed the NCLEX exam ranged from 70.9% to 100% with a mean of 91%.

The number one reason listed by Berzon for non-completion of the nursing program was failure in either nursing theory or clinical practice. Other reasons reported in order of priority were career change, illness, family commitments and failure in non-nursing courses. Since most schools reported few minority or high risk students admitted to the nursing programs, the data did not support Berzon's hypothesis that increased minorities and high risk students would increase attrition and decrease passing rates on the NCLEX exam.

Another study of associate degree students (Lambert, 1981), reported that nursing courses were not the students' problem but rather basic skill competencies in math and English. In partial confirmation of this, Oliver (1985) found the higher predictors of academic success in an associate degree nursing program to include high school rank plus biology and English grades. Data from Oliver's study also characterized the successful associate degree nursing student as older, attending school part time, and having previously attended college.

However, other studies had dissimilar findings. Felts (1986), examining five associate degree nursing programs, suggests that age does not make a difference, and that only high school grade point average and ACT scores can predict success in nursing courses and on the NCLEX exam. Woodham and Taube (1986) surveyed 104 associate degree nursing graduates and found that age was

not significant as a predictor of success but that nursing course grades and SAT verbal scores had a significant positive relationship with NCLEX success.

Marshall (1986) administered a survey to 161 freshmen students in an associate degree nursing program in Ohio, hypothesizing that student attrition was the result of lack of social support (emotional, informational and tangible). Results indicated differences between dropout and continuing students on age and the size of the student's social network. The students who dropped out of the nursing program with academic problems were older and had smaller social networks. The students who remained in school reported more instances of social support. On the other hand, Hilbert and Allen (1985) examined the effects of social support and found that while it was important to student health outcomes it was less important in relation to educational outcomes.

Little research with the associate degree populations is replicated and there is little agreement among researchers, as can be seen, on the reasons for nursing student attrition. Basic skills, school rank, ACT or SAT scores, age, social support — all are variously reported as the primary cause. There is no consensus in the literature as to whether age makes a difference nor as to whether support groups help students academically or only socially.

#### Predictors of attrition for minorities in nursing

According to the National League for Nursing (1988), 32,170 nurses graduated from associate degree programs in the United States. Of that number 2,812 nurses were Black, 1,006 were Hispanic, 487 were Asian, and 180 were American Indians. The nearly 800 nurses graduated from the fifteen community colleges of Massachusetts in 1988 included only 28 Black graduates, 5 Hispanic, 3 Asian and no American Indian. Attrition rates for minority nursing students are even higher than those of the general nursing student population, ranging from a low of 15% to a high of 85% (Rodgers, 1990). Some authors (Rodgers, 1990; Allen,



1989; Dell and Halpin, 1984) suggest that minority nursing students come to college with serious problems such as lack of academic preparedness from high school, producing possible defects in the areas of mathematics, reading comprehension and analytical skills.

A rare study was conducted (Dell and Halpin, 1984) in a predominantly black private baccalaureate nursing program. High school grades, SATs and scores on the NLN Pre-Nursing Exam were obtained for 456 Black students enrolled in a BSN program. The study reports that 181 of these students graduated which gives an attrition rate of above 60%. For those who graduated, significant predictors of success on the NCLEX exam were high school GPA, SATs, the NLN Pre-Nursing Exam and senior year college GPA.

Generally speaking, the literature offers many reasons for attrition, various indicators for the prediction of successful completion, and suggestions, largely untested, for improving retention. These retention recommendations will be described in the next section.

#### Factors contributing to improved retention

Studies with a focus on retention looked primarily at either the prediction of success or the prediction of probable failure. Most studies however looked for the probable failure. The significantly high risk student is described (Whitney, Chadwick, 1986) as the student who enters the nursing program with low SAT scores, low cumulative and science grade point average, scores below the class mean on nursing course exams and whose cumulative grade point average drifts downward while in the nursing program. Beal and Noel (1980) suggest it is possible to determine those students who will drop out of college by looking for the following indicators: low academic achievement, limited educational aspirations, indecision about a major or indecision about career goals, inadequate



financial resources, being economically disadvantaged, and being first in a family to attend college.

Beal and Noel suggest that retention of students can be linked to the following positive characteristics:

1. Caring attitude of faculty and staff
2. High quality teaching
3. Adequate financial aid
4. Student involvement in campus affairs
5. High quality advising
6. Excellent counseling services
7. Concern for student/institution "fit"
8. Excellent career planning services
9. Admissions geared to graduation
10. Early alert system

(Beal and Noel, 1980)

Payne and Duffy (1986) did a retrospective study on a group of 1984 BSN graduates who failed the NCLEX exam, to see if they could have been identified as 'at-risk' students during school so that timely interventions might have been made. Their conclusions were that the majority of at-risk students can be identified fairly early in the nursing program. The optimal time for predictions is following the first semester when the truly high risk students can be identified quite accurately. But the most important prediction points appear to be the mid-junior year, end of junior year and mid-senior year for BSN students. If one were to apply the results of Payne's study to associate degree education, then high risk identification would be important near the end of the first semester and most important during the second semester and mid-third semester.

A study of The University of San Francisco's School of Nursing addressed the following questions related to retention: 1) What are the experiences and needs of freshmen students? and 2) What is the outcome of addressing these needs in terms of (a) retention, (b) academic success and (c) satisfaction? They

found that student attrition was highest in the first six weeks of the semester. Another finding was that peer group study did not work as well as study groups led by an instructor. Since success in the program was related to good study skills, a student orientation workshop was developed to be attended before entering the nursing program. This workshop helped the students' socialization process as well as teaching the students note-taking, study skills, test taking, time management and stress management, and providing tutoring in math and English. (Buccheri and Trygstad, 1989)

An associate degree program in South Carolina that was experiencing a 42% attrition rate reduced that rate to 16% by giving an orientation program that included "social support" offering sessions in problem solving, study skills, stress management and values clarification (McDonald, 1983).

Success in decreasing attrition with a similar technique was also reported by Brown (1987) who put together a support group for nursing students who had minimal passing grades. The group met weekly to discuss academic concerns and learn specific study skills as well as relaxation techniques. None of the eleven students who participated in this experimental support group failed, while a control group had five failures.

One study looking primarily for successes indicates that older students with up to eleven semester hours of previous college experience tend to be more successful in an ADN program (Montgomery, Palmer, 1976).

Another rare study of a successful effort by the Atlantic Community College Associate Degree Nursing program reports their attrition was reduced eight to ten percent annually by implementing three structural changes. First was a mandatory orientation for freshmen and spouses that included stress management, time management, study habits and available counseling services. Senior students assisted with planning and answering orientees' questions.

Second, faculty advisors met with their advisees at least twice yearly to discuss course selection and assess academic status as well as make referrals for appropriate needed services. Finally, a questionnaire pertaining to academic and/or personal problems which might affect student performance was distributed twice each semester, reviewed by the nursing chairperson, given to the student's advisor and used by advisor and student in planning an intervention (Warner, Grohman 1990).

Among the studies reviewed above were several that concluded with lists of suggestions for the improvement of retention. The suggestions, which show largely similar approaches, are listed below.

The nursing chairpersons who responded to Berzon's study (1983) gave the following suggestions for retention of associate degree nursing students:

1. Have an effective advisement and counseling system.
2. Do an assessment prior to admission.
3. Have tutorial help in the clinical laboratory.
4. Do faculty interviews.
5. See that students have knowledge of the nursing role before admission
6. Remind students to keep up with work.
7. Review admission criteria.
8. Improve the image of nursing.
9. Encourage better study habits for students.
10. Encourage better high school preparation of students.

Berzon, however, made her own recommendations for retention differing from those of the other chairs; her recommendations are as follows:

1. Involve chairperson of nursing and faculty more fully in the selection of applicants to the nursing program.
2. Arrange for students to have remedial work early in their program.
3. Hire nursing faculty to staff the nursing laboratory, at least part time.
4. Assign all nursing students to nursing faculty for advisement.
5. Give incoming freshmen nursing students workshops on study habits and test taking techniques.



6. Be sure all applicants to nursing programs understand the role of the nurse realistically, before entering the program.
  7. Provide effective advisement and counseling services.
  8. Have nursing chairpersons see all failing nursing students for an exit interview.
  9. Actively recruit minority students to nursing programs.
- (Berzon, 1983)

Hess and Coon (1973), examining recruitment and retention in 32 ADN programs, 25 BSN programs, 70 diploma and 1 master's nursing program offered the following recommendations for retention:

1. Selective recruitment for qualified candidates.
2. Improved guidance for those already in nursing.
3. Early acceptance or rejection (before June) of September nursing applicants.
4. Guidance in high schools to select appropriate courses in preparation for nursing.
5. Expansion of financial assistance and government support.
6. Guidance in colleges.
7. Early identification and assistance for high-risk students.

Several recommendations for improving retention, unusual in their specificity and feasibility, came from the University of San Francisco study.

The San Francisco study's recommendations are:

1. Have individual meetings with all new students the first 6 weeks of the semester.
2. Identify high-risk students during the first 2 weeks of the semester and make early interventions.
3. Have one or two times set aside per week when all new students can get together with an instructor that they met during orientation.
4. Try to arrange for senior nursing students to be assistants in the anatomy and physiology labs to help the freshmen in relating information to nursing practice.
5. Prepare all new students during the first week of school regarding:
  - a) time management skills, b) study skills, c) importance of studying with someone.



6. Hold a group meeting early in the semester for all commuting students to arrange rides and study groups.
7. Formally introduce new students to junior and senior nursing students who can encourage them.

(Buccheri-Trygsrad, 1989)

The recommendations for retention for minority nursing students are listed here separately and include early testing to determine if remediation is required, peer tutoring, efforts to reduce feelings of alienation and social estrangement and increased campus cultural awareness. Other steps suggested in the literature to avoid minority attrition include commitment by administrators and faculty to minority education, formation of minority support groups, tutorial services and peer counseling, cultural diversity in the curriculum, remediation programs, minority speakers, and minority role models (Allen, 1989).

In a three year study to determine the role that faculty members play in the recruitment and retention of minority students, Buckley (1980) found that the single most important factor positively affecting minority student retention in nursing was faculty commitment to black nursing students.

One nursing school in the inner city with a minority population of 75-98%, found that Computer Assisted Instruction (CAI) significantly reduced attrition. Advantages reported for the student using CAI were: (1) the provision of more individualized instruction, (2) more active involvement through continuous interaction with the computer, (3) immediate feedback, (4) control over the learning environment and the ability to select or reject learning activities (Paulanka, 1986, Van Dongen, 1985).

To summarize, while the review of the literature did not answer the primary question of this study, it did suggest a number of possible contributing factors which had not surfaced previously. Some of the predictors related to nursing program success included SAT scores, high school rank, grade point

average, and grades in natural sciences. Factors thought to influence attrition were family responsibilities, illness, failure in non-nursing courses, career change and, for minorities, lack of preparedness in high school.

Improved retention methods noted in the literature review were varied. Suggestions included prior college experience before entering nursing, positive and caring attitude of faculty and staff, good counseling and advising, available support and study groups, and tutorial and peer counseling.

Essentially the literature reviewed indicated that the question of remedies for attrition and retention of nursing students had not been satisfactorily answered as yet.

## CHAPTER III

### THE INITIAL EXPLORATION

The purpose of the literature review was to search for variables affecting attrition in associate degree nursing programs and to examine measures of success in the retention and ultimate licensing of those students. As already mentioned, because of small samples, lack of replication, differing populations and differences in length of RN preparation, the information discovered was not definitive and indicated a need for further study.

#### Initial Exploratory Research

Most of the predictors cited in the literature were used in the design of an initial questionnaire to be administered to the directors of the Massachusetts ADN programs. These variables were listed and incorporated into a questionnaire (Appendix A) and sent to the four private and fifteen community college Associate Degree Nursing Programs, surveying entry requirements, attrition rates, measures of retention, numbers of minorities, and passing rates on the NCLEX-RN exam. The choice of a questionnaire for data collection was made because this tool is considered valuable in exploratory research for obtaining standardized information from all subjects. Reasons for the selection of an ADN population were twofold. Few studies on attrition and retention in ADN programs are available and contact with this sample was convenient to this



researcher who is an ADN nursing chairperson. The hope was that there would be a maximum return of the questionnaire because of personal association and common interest.

Analysis and critique of the questionnaire was conducted by my comprehensive exam committee. Further, it was reviewed and commented on by a Chairperson of a Research Department, a Dean of Health and Human Services, a Retention Co-ordinator of a Community College, an Admissions and Transfer Officer and a Chairperson of a General Studies Program. Several constructive suggestions were made. The questionnaire was revised and sent to each Chairperson of Nursing in Massachusetts with a cover letter, a deadline and a self-addressed stamped envelope. Two days after mailing the questionnaire, at a meeting of the Massachusetts' Community College Nursing Chairpersons, I announced that they would be getting the questionnaire, with a promise of a copy of the results to each chair who responded. Much interest was expressed.

Personal calls were made to the Division Chairpersons extending the deadline in the hope of a complete return. In fact all fifteen community college questionnaires were completed. Two of the four private associate degree nursing programs responded but since one private nursing program had only recently opened, no data on it was available. Therefore, it was decided to use only data from the fifteen community colleges. A statistician recommended that frequency distribution tables would be the appropriate statistical approach, in order to interpret the large amount of data collected.

### Results

The range of passing grades in the nursing programs reported on is from 70% to 77% with the most frequent grade requirement being 73% or 75% to pass. The number of credits needed to earn an associate degree in nursing differ slightly: the least required is 65 credits, the most is 76 credits. Some programs

admit as many as 85 to 100 candidates. Others admit 30 to 40 students per year. Attrition rates vary among the schools. Some rates are as high as 59%, some as low as 2%. The 92.2% passing rate on the national licensing exam for registered nurses is commendable for community colleges considering the national percentage of passing for 1990 was 89%. Very few schools fall below the national passing average. Comparing attrition rates and students' passing of NCLEX shows that high attrition does not relate positively to the passing of NCLEX.

The more common criteria for admission are a high school diploma or GED, along with high school Biology, Algebra and Chemistry.

What are the major reasons for student attrition? The responses indicated that personal reasons such as illness, pregnancy, divorce and family responsibility are the number one reason for nursing student attrition. Second in priority, according to the nursing directors, is nursing program failure followed by financial problems, working full time, lack of aptitude and change in career goals. Given lower priority as reasons for attrition were poor reading, math and study skills, having English as a second language, failure in a science or support course, child care problems, or change of location.

When asked what strategies were used to retain nursing students, the most frequent strategies mentioned were advisement, including academic and personal counseling, tutoring and early high school risk identification. Second highest was faculty group support and tutoring followed by peer support and tutoring. Strategies less frequently mentioned were use of placement tests, increased financial assistance and having a learning center as a resource. Strategies mentioned infrequently were attention to student course evaluations, providing a programmed text in Math, taking liberal arts courses before nursing and having a good instructor in the nursing lab.

What future retention practices would nursing directors like to see?

Individualized tutoring was the top priority. Pre-entrance advising and placement, comprehensive advising and counseling, and peer study and support groups were of equal weight as second in priority and administrator and faculty support-study groups, child care and a full time nursing lab coordinator held the third position. Less frequently voiced desires in retention practices included a learning center, identification of high risk students, a slower paced nursing program, alternative teaching-learning, better high school preparation, flexible clinical schedules, increased faculty and interviewing prospective students.

The faculty's major contribution to student success, according to the directors, is individual, thorough and caring advising which is both reasonable and available. Encouraging study and support groups was second. Extra assistance in the way of handouts and study guides was third highest. Other contributions by faculty included frequent student faculty conferences, varied classroom strategies, critical thinking test questions, referrals to support services and early identification of clinical strengths and weaknesses. Lower in frequency were an 8 to 1 ratio of student to faculty in the clinical areas, appropriate clinical assignments, candid evaluation practices for students, faculty to provide a supportive rather than intimidating atmosphere for learning, physical assessment to be practiced in the second year, pre-admission counseling, clear and written statements of expectations from the faculty, early re-admission and withdrawal and financial help for students.

When asked to identify how students contribute to their own success, the directors' response was that students' greatest contribution is forming support/study groups with peers. Other items of high priority for student success were to work part-time, take advantage of college resources, study and keep up with the readings and be highly motivated. Directors felt students practicing in



the nursing lab, completing general studies before nursing and working in the health field lent some strength to the probability of student success. Factors considered of lower priority were having a dependable car, flexible child care, family support, time management and test taking skills and establishing a nursing organization.

The number one predictor of student success in a nursing program was considered to be participation in peer study groups. Second in priority, as identified by the directors was peer support groups. Previous college experience was considered third in order of priority, followed by the natural science college quality point average. Peer tutoring and pre-nursing quality point average ranked fifth and sixth. Predictors lower in priority were the pre-admission interview, scholastic aptitude scores, ACT scores and the NLN pre-nursing exam.

The number one predictor of student success on the National Registered Nurse Licensing Exam was considered by nursing directors to be the nursing quality point average. A close second was identified as the student's nursing curriculum quality point average. NLN achievement tests came third in priority as predictor of NCLEX success. An NCLEX review course was considered useful by ten directors, ranking fourth. Nine program directors considered the fifth priority useful, that of the Mosby Achievement Test. Considered lowest in priority was the Smith Computer Review; however, six schools graded this review as useful.

Demographic data on the associate degree nursing students of Massachusetts was included in the responses. Some schools reported average age, others reported age range. The averages listed ran from 26 to 35 years old. The age ranges reported for nursing students went from 17 to 65. All the programs are predominantly female with an approximate 8 to 10% male population. Anywhere from 2 to 59 licensed practical nurses (LPNs) are admitted yearly to the fifteen

associate degree nursing programs. As is the case nationally, the percentage of minorities entering nursing in these programs is low. Because the classification of students into full-time or part-time categories was not defined in the questionnaire, the data collected may not be accurate. Therefore, conclusions could not be drawn from it.

### Discussion

The questionnaire responses from the community college nursing directors show that prerequisites for admission to associate degree nursing programs are generally similar. The data also suggests that attrition in those programs tends to be high despite the admission criteria, the passing grade or the number of credits within the curriculum. The major reasons for attrition, according to the directors in this study, were similar to the reasons reported by the Board of Registration in Nursing Annual Report's Form 75, cited previously. From the data collected, it appears that the major reasons for attrition in nursing are 1) personal problems, 2) course failure, 3) excessive work hours and 4) financial problems. It seems important for advisors to be aware of this information to be able to counsel students before entering the nursing program to enlist family support, to plan on decreased work hours and to understand the need for financial security in order to have a better chance of success while in the nursing program.

While other reasons identified by the nursing directors for attrition were not as fully agreed to, those reasons should also be examined. Losing students because they were unsuited for nursing or because of career change can be disruptive to an established class. This might be avoided with a detailed pre-admission orientation, explaining what nursing actually involves. Because the other reasons for attrition demonstrate the need for developmental work (in reading, math, English and science) placement tests would be helpful in assisting the student towards the level necessary for functioning in the nursing program.

Child care was rated low in priority in the response to this questionnaire perhaps because some schools, like my own, already have a facility for such care. Since that question was not included in the questionnaire, generalizations on this issue cannot be made.

Clinical failure does not seem to be a major reason for attrition, according to the responses to this questionnaire or the results of the Board of Nursing's annual survey. It is interesting that the strategies the directors identified that help retain students, the future retention practices wished for, and faculty contributions to nursing program success are very much the same. The strategies included: 1) comprehensive, caring and individualized faculty advising. 2) faculty support and study groups and 3) peer tutor and support groups. It may be that increased technology, computerization and self-paced learning have distanced administrators and faculty from the students. Just as we encourage individualized patient care, it may be time to focus on student care in an individualized manner as a method of reducing attrition in nursing programs. Though it may seem simple, this concept was given top priority by nursing directors.

Other methods of retaining students suggested by directors had to do with variety in classroom approach, and faculty assistance in designing and distributing handouts and study guides. These seemed reasonable suggestions since nursing knowledge is changing and increasing at a very fast pace and an associate degree nursing education is a condensed two year, four semester program.

Directors felt the greatest contributions students made toward their own success in nursing were 1) to form support and study groups with peers, 2) to work part-time ( meaning, presumably, rather than full time), 3) to take advantage of college resources, 4) to study and keep up with the reading and 5) to



have high motivation. These strategies suggest that the highly motivated student who takes responsibility for his learning and seeks assistance when needed has a better chance of succeeding in a nursing program. This information could certainly be included in a pre-orientation program for newly admitted students, along with an explanation of the college services available to the students, since often the associate degree nursing student is a returning adult who has been out of school a number of years and is not always aware of the resources available at the college.

Other factors that directors felt contributed to student success included gaining work experience in the health field, completing support courses before entering nursing, attending classes and practice labs and having family support, flexible child care and a dependable car. For a different student population such as the generic nursing baccalaureate candidate, family support, child care and a dependable car may be insignificant factors in determining success but for the associate degree nursing population these factors may be of top priority. As one associate degree candidate reminded me in an advising session on work hours, "I'm a 35 year old single parent with three children and daddy doesn't pay the bills".

The highest predictors of student success identified by nursing directors were organizing peer study and support groups, the same strategy suggested by directors for retention of students and faculty contribution to student success, a strategy which could be included in a pre-orientation program. Other factors ranked high in predicting student success were previous college experience and ability in the natural sciences. Predictors that seemed of less concern to these directors were the SAT, ACT or NLN scores, high school rank and pre-admission interview. The latter predictors were also considered of little importance in the literature reviewed for this study.

Student success on the national licensing exam is positively related to the student's nursing curriculum cumulative point average and the total curriculum cumulative average. The third predictor of NCLEX success was considered by the nursing directors to be the NLN Achievement Tests, followed by an NCLEX Review Course as fourth in priority. Predictors considered less useful were the Mosby Achievement Test and the Smith Computer Review. It should be noted that the prioritization of these predictors of success on the NCLEX-RN exam may be misleading since each school may not have had knowledge or experience with each of the listed predictors, being instead only familiar with the particular predictors that they use in assisting students to prepare for the licensing exam.

### Summary and Implications

The two year associate degree nursing program is known on community college campuses as a rigorous program. To complete the program, a strong academic background is required. Ability in reading and mathematics must be at the minimum of twelfth grade level, and potential students must have done well in the high school sciences. It also seems clear from reviewing the literature and examining nursing chairpersons' responses that the chance of success on the NCLEX-RN examination is greatly increased if the student has a strong nursing and curriculum average, has taken the NLN or Mosby Achievement Tests and has enrolled in an NCLEX Review Course.

From this preliminary study, it seems clear that retention and completion of the program are dependent on the efforts of both faculty and students. Recommendations on how the faculty can help include comprehensive and caring academic and personal counseling, faculty study and support groups, a non-threatening atmosphere in the clinical area and clear faculty expectations for students. Students, according to this research, can best help themselves by joining



support/study groups, working part-time, taking advantage of college services, keeping up with the readings and study and being highly motivated.

This initial questionnaire would need replication before its findings might be generalized; however, because all the Massachusetts Community Colleges responded, some suggestions for action may be drawn from the results. For example, retention might be improved if student orientation sessions, support and study groups are established. The faculty at orientation or senior nursing students could explain the role of the nurse, the need to work part-time and the need for family support and commitment to this endeavor of becoming a nurse. It may also be wise to hold seminars for faculty in order to share with them what nursing chairpersons believe would be helpful in encouraging student success, such as individualized academic and personal counseling, clearly stated expectations and a non-threatening clinical experience. Chairpersons might suggest (if they don't already) that senior nursing students take the NLN or Mosby Achievement Tests and also enroll in an NCLEX Review Course.

A further question arose in examining the results of this study: how did the student who was academically borderline, bombarded with stressors and working full-time, still manage to succeed in the associate degree nursing program? What support and what skills did that student bring or develop? The next step in this research was to obtain the students' views on attrition, retention and success in associate degree nursing programs and to compare their perspective with that of the nursing chairpersons.

#### Limitations of Preliminary Survey

The following are limitations of the preliminary survey. The sample selected was one of convenience which weakens generalizability. The sample size of 15 respondents was small. The questionnaire was used for the first time and needs to be tested for further validity and reliability. The subjective opinions of



one particular group, the ADN chairpersons, were sought. Some variables (e.g., the phrase 'personal reasons') need to be more clearly defined. Some information on the questionnaire was unfamiliar to respondents (i.e., National League for Nursing and Mosby Comprehensive Tests). The questionnaire needs restructuring with the assistance of a statistician so that computer analysis of the data can be done.

While the nursing chairs' opinions on how a student can achieve success in a nursing program and on the license examination are based on experience and reflection and therefore valuable, they are also subjective.

These faculty attend several of the same professional meetings per year, share feelings and attitudes openly and may, as a network, be insular in their thinking.

The nursing chairs cannot always know the full milieu of their students and may be unaware of stressors effecting a student's ability in the nursing program. It may be possible that what the program chairs assumed were factors in student attrition and retention are not, in fact, what the students would see as such. For example, chairpersons recommend that in order for a student to succeed in the nursing program, they need to belong to study groups and work no more than twenty hours a week. Yet what of the students who succeed yet are weak academically, who haven't any time for study groups and must work forty hours a week? To what do they attribute their success?

In any case, the significance of this initial exploration rests on the usefulness of the range of forces and problems identified, as well as on the 100% return of responses from the nursing chairs with their judgments on factors in student retention and success.

## CHAPTER IV

### THE STUDENTS' SURVEY

The preliminary research provided variables, that is, the factors that nursing directors saw as contributing to the attrition and retention of their students. These variables and also variables found in the review of literature were then used in the survey of students in associate degree nursing programs.

The questionnaire which had been sent to the nursing directors was redesigned to gather opinions of nursing students on attrition and retention. The sample surveyed included students who graduated from, as well as those who failed or left, a nursing program. It also included those graduates who went on to either pass or fail the national licensing exam. The inclusion of failed students in the survey seemed valuable since their perceptions of causes for attrition and retention might differ from the students who succeeded in nursing.

Since differences of opinions may also exist between students who attended a nursing program in an urban or rural community, samples were randomly selected from two urban community colleges and two rural community colleges.

Comparisons from the data collected on reasons for nursing student attrition and retention were made between nursing directors and students,

between nursing directors and rural students, nursing directors and urban students and between rural and urban nursing students.

### Student Opinion in the Literature

In 1991, in a seminar on student retention Dr. Vincent Tinto of Syracuse University emphasized that students feel faculty involvement is critical to the success of student retention and suggested that research over the past 15 years has “consistently found that positive interactions with knowledgeable and caring faculty members has a direct bearing on whether students persist to earn a degree.”

Do students and graduates see the issue this way too? In an ERIC search few documents on students’ opinions about attrition and retention in the community college setting were found. These few studies are described below.

In a study conducted at Tallahassee Community College in 1982, to determine why students withdrew, the college surveyed all students who enrolled in the Fall of 1981 but had not returned by Fall 1982. The major non-academic reasons for withdrawal as reported by these students were conflicts between schooling and family, work commitments, and family changes or pressures. Many of the students who had withdrawn reported themselves as self-supporting and having to work over twenty hours a week.

Texas Tech University (1984) surveyed Hispanic students concerning achievement of their educational objectives within a community college environment and found that if students were able to overcome obstacles to their education such as “financial restraints or other non-academic restraints, they were then most interested in engaging in a quality education experience.”

Unfortunately, a quality education experience was not defined in this study.

A telephone survey at Prince George's Community College in 1988 surveyed Fall 1987 students who did not return the following semester and found



that “employment demands” was the most common reason students gave for dropping out.

In a study that surveyed nursing graduates concerning their educational experience, areas of concern within that nursing program identified by the students were: (1) a hazardous 1:10 faculty/student ratio within the clinical setting, (2) the increase in scientific knowledge and technical changes making it difficult to cover material within the time frame of a nursing program, (3) lack of cultural content within the nursing curriculum and (4) the absence of a critical thinking course (Germann Community College, 1989).

It seemed reasonable that in this search for reasons for nursing student retention and success, the opinions of nursing students themselves should be sought. The hypothesis concerning this phase of the study was that the students would have a different picture of the causes and remedies of attrition. The comparison of what the nursing chairpersons viewed as important to student success with what students considered important for success has merit, whether there is agreement or disagreement between these groups. The data collected also allows for comparison of responses between selected urban and rural nursing programs regarding attrition and retention.

### Design and Implementation of Student Survey

#### Questionnaire

For the second half of this study, the questionnaire previously used was redesigned in order to seek the opinions of associate degree nursing students about retention and success in a nursing program and on the NCLEX-RN examination. The questionnaire (Appendix B) elicited information on the following research questions:

1. What reasons contribute to nursing student attrition, defined by withdrawal or failure?

2. What strategies should be used to retain nursing students?

3. What can faculty do to contribute to nursing student success?

4. What can nursing students do to contribute to their success?

5. What are the possible predictors of student success in nursing?

6. What are the possible predictors of student success on the NCLEX-RN examination?

7. Will students' responses compare with associate degree chairperson's responses?

8. Will the responses from nursing students and chairpersons of selected nursing programs located in rural communities differ from the responses of programs located in urban communities?

### Sample

The sample for this study was drawn from four associate degree nursing schools of Massachusetts, two located in urban communities and two located in separate rural communities. Sample selection was based on attrition differences between the four schools selected. The rural schools selected for this study (A01 and E05) report an average attrition rate in four years (1985-88) of 17.5% and 16.2%. The urban schools selected for this study (F06 and O15) report, for the same four years, average attrition rates of 37.5% and 41.5%.

The students from each of the four associate degree nursing programs were randomly selected by the nursing chairperson of that program. Students from each of the four schools for six years, from 1985 to 1990, were selected by the following criteria.

8 graduates who passed the Nursing Program and passed NCLEX, first time.

8 graduates who failed or left the Nursing Program, first time.

All graduates who passed the program but failed the NCLEX-EXAM, first time.

First-time performance was used in all categories for sample consistency since many nursing programs allow students to re-try a nursing program at least once and the NCLEX licensing exam can also be taken more than once after failing. The 'first time' category also eliminated intervening variables such as becoming test-wise after failing and then retaking a test.

To randomly select eight graduates who passed the nursing programs and the NCLEX-RN exam was not complicated. Additionally, eight students who had failed the nursing program were to be identified. However, including eight students who failed the nursing programs was not always possible. Selecting eight graduates yearly from the four schools who failed the NCLEX exam was not possible since in some years certain schools have not had failures. For this study, therefore, all graduates from the four schools who failed the NCLEX-RN exam from 1985 through 1990, were surveyed, a total of 66 graduates. The sample distribution can be seen in Table 4 below.

The total number of participants surveyed in this sample was to be 451 associate degree nursing students, if each school submitted names of eight students for each category. Because each school did not have eight students in each category from 1985 to 1990, the survey sample to whom the questionnaire was mailed totalled 394 nursing students. The sample distribution can be seen in Table 4.



Table 4  
Sample Distribution for Study

RURAL SCHOOL A01				RURAL SCHOOL E05			
YEAR	PASSED PROGRAM	FAILED / LEFT	FAILED NCLEX	YEAR	PASSED PROGRAM	FAILED / LEFT	FAILED NCLEX
1985	7	8	2	1985	8	2	0
1986	8	5	1	1986	8	1	0
1987	7	8	6	1987	8	3	2
1988	8	8	3	1988	8	8	1
1989	8	8	2	1989	8	6	7
1990	8	6	1	1990	6	7	4
TOTAL	46	43	15	TOTAL	46	27	14

URBAN SCHOOL F06				URBAN SCHOOL 015			
YEAR	PASSED PROGRAM	FAILED/ LEFT	FAILED NCLEX	YEAR	PASSED PROGRAM	FAILED/ LEFT	FAILED NCLEX
1985	8	1	1	1985	8	8	4
1986	8	4	2	1986	8	8	0
1987	8	6	0	1987	8	8	3
1988	8	1	5	1988	8	8	5
1989	8	6	5	1989	8	8	5
1990	6	7	3	1990	8	8	3
TOTAL	46	25	16	TOTAL	48	48	20

## Procedure

A letter was sent to each of the four nursing chairpersons requesting their participation in this study (Appendix C). A personal meeting followed the letter in order to explain their part in the research, which was to randomly collect the names and addresses of the students necessary for this study. This meeting also allowed for any questions the directors had about the research. Anonymity and confidentiality of results were assured at this time.

A letter was designed for individual chairpersons to sign (Appendix D) which accompanied questionnaires sent to their students. This letter supported the researcher's study on attrition and retention. The intent of this personal letter from the students' director was to reassure the students that their chairperson knew the researcher and was supportive of the research. The letter also confirmed that since questionnaires would be coded, individual schools would not be able to identify individual student responses. Anonymity and confidentiality was also assured for students in this letter.

The questionnaire was submitted to, and approved by, the Human Subjects Review Committee at the University of Massachusetts before being mailed to students. On the first page of the questionnaire, informed consent was addressed as follows, "Completing this questionnaire constitutes your acceptance in participating in this research project."

## Data Coding and Analysis

Each questionnaire was coded. The following codes were used:

Rural Schools	A01, E05
Urban Schools	F06, 015
Red for Failure.....	R
Green for Pass .....	G
Program.....	P
Board Exam (NCLEX).....	B
First of 5 in the Sample.....	1/5
Second of 5 in the Sample.....	2/5

Some examples of codes used on the questionnaire and coding interpretations follow. The entire coding system can be seen in Appendix E.

Example A.	85 (year)	A01 (rural school)	1/5 (1st of 5 in sample)	GP (passed program)
Example B.	88 (year)	O15 (urban school)	4/5 (4th of 5 in sample)	RP (failed program)
Example C	90 (year)	E05 (rural school)	1/5 (1st of 5 in sample)	RB (failed NCLEX)

The results from the survey of students were tabulated in frequency distribution tables, which were then compared with frequency distribution tables of the associate degree chairpersons' responses reported in the earlier stage of this research. Other response comparisons were made between the chairpersons and students from rural communities, the chairpersons and students from urban areas and students from urban and rural communities.



Male and female differences, minority views and views on attrition and retention in nursing according to age and previous experience in the health field were not measurable, because of the mixed numbers in these categories.

### Significance of Student Survey

As mentioned earlier in this research, retention of enrolled nursing students is a crucial part of supplying the need for nurses, since admissions to nursing programs are decreasing and attrition rates for all basic nursing programs are as high as one-third of the entering class (Rosenfeld, 1989).

Very little research has been done in the area of attrition and retention in two year nursing programs. This study offers data not previously available to the two year associate degree nursing programs of Massachusetts. It provides descriptive information from directors and students concerning attrition and retention in nursing programs and predictors of success on the licensing exam.

This study gives a first-time comparison between director and student views about how to succeed in becoming a nurse. The information gathered can be base line data for further research on the topic of nursing student attrition and retention in associate degree nursing programs from the student perspective. Opinions are categorized by age group, by rural or urban nursing school experience, by gender and minority group, concerning suggestions on attrition and retention. Predictors offered from each of these groups on how to succeed in taking the national registered nurse licensing exam are also tallied .

### Limitations of Student Survey

One limitation of this study is that since the data collected reflects only associate degree nursing programs it is not generalizable to baccalaureate programs. Other limitations include:

- The sample is drawn from one state, Massachusetts.
- Some addresses of former students were not current, affecting return rate.

- Some students who failed the nursing program chose not to participate.
- In some nursing programs students can repeat the program after failing.

Therefore some of the randomly sampled students fit all three categories, failed nursing program and/or repeating, passed nursing program and failed NCLEX.

- The number of questionnaires returned from each of the four schools was not equal.

- The number of graduates who failed the NCLEX-RN exam for each school over a six year period was not equal.

- Of the 65 graduates surveyed who failed the licensing examination only 10 chose to participate in the study.

## CHAPTER V

### RESULTS

To repeat, the exploratory study described here used a questionnaire to seek opinions about attrition and retention in an associate degree nursing program from former nursing program students, as well as their opinions on predictors of success on the national registered nurse licensing examination (NCLEX-RN).

A total of 394 questionnaires were sent out to graduates of four associate degree nursing programs, two schools in an urban community (identified as F06 and O15) and two schools in a rural area (identified as E05 and A01). Nursing graduates' names were selected randomly by the directors of the nursing programs. Three categories of students were included: 1) students who completed an associate degree nursing program and also passed the NCLEX examination within the six year period of 1985-90; 2) students who passed the program but failed the NCLEX examination in that same period; and 3) students who failed, or dropped out of, the nursing program within the six year period of 1985 - 1990.

The questionnaires were mailed to the randomly selected former nursing students from the four community college nursing programs. Because many of



the student addresses were not current, a number of questionnaires were returned to the researcher. Follow-up with postmaster offices for address changes and phone calls to graduates were made in an attempt to increase the sample size.

The actual data obtained for this study, after these actions had been taken, consisted of the contents of 115 questionnaires returned by former nursing program students. The distribution of questionnaires returned can be seen in Table 5, and the demographics of the students who returned questionnaires are shown in Table 6.

Table 5					
Categories of Questionnaire Return by Nursing Program					
CODE	SCHOOL TYPE	NUMBER RETURNS	PASS PROGRAM & NCLEX	FAIL PROGRAM	FAIL NCLEX
E05	Rural	22	14	4	4
F06	Urban	21	17	2	2
A01	Rural	35	22	12	1
O15	Urban	36	19	14	3

Table 6					
Description of Sample					
		Rural Ao1	Rural E05	Urban F06	Urban O15
Male		4	4	2	3
Female		32	18	19	33
Age Range:	20 - 24	6	5	–	7
	25 - 29	8	4	9	12
	30 - 34	5	1	4	7
	35 - 39	11	2	4	5
	40 - 44	2	8	3	5
	45 +	4	2	2	–
Marital Status:	Single	6	7	4	15
	Married	17	8	14	13
	Divorced	10	7	3	8
	Widowed	3	–	–	–
Nurse Exper. Prior to ADN:	None	13	7	4	15
	Nurse Aide	16	10	5	9
	Orderly	–	–	3	1
	LPN	6	3	9	6
	Other	1	2	–	5
Source of Finances:	Self	32	19	20	27
	Scholarship	10	6	2	8
	Financial Aid	8	12	5	18
	Veteran Benefits	1	–	–	–
Hours Employed While in ADN	0 to 10 hrs	9	7	6	9
	10 to 20 hrs	11	7	6	9
	20 to 30 hrs	9	6	4	8
	30 to 40 hrs	7	2	5	



The total sample of 115 graduate nurses in this study contained 102 females and 13 males. The age range varies depending on the school. For rural school A01, the greater number of participants were in the 35 to 39 year old age range. For rural E05, more participants were in the 40 to 44 year age range. For both urban schools, F06 and O15, the most common age range of participants was 25 to 29 years old.

The greater number of subjects, 52, in this sample were married graduates. Thirty two respondents were single and 28 were divorced. Three respondents from rural school A01 were widowed.

As Table 6 shows, 39 respondents had no nursing experience prior to entering an associate degree nursing program, 40 subjects had nurse's aide experience, 4 individuals had a hospital orderly's background, 24 were licensed practical nurses before entering the ADN program and 8 people reported other experience before nursing.

The most common source of finances for the respondents in this study was self, financial aid was the second most common, and scholarships surfaced as third.

The greater number of respondents (32 of the total) reported working 10-20 hours per week while attending nursing school. Thirty-one graduates of the total sample reported working 0-10 hours per week, 27 worked 20-30 hours a week during their nursing studies and 24 graduates (or nearly a quarter of the whole group) worked 30-40 hours a week while enrolled in their nursing program.

To collect data on associate degree nursing students' opinions on retention and success in a nursing program and on the NCLEX-RN examination, seven questions were asked, with the request that the answers were to be prioritized. The questionnaire is reproduced in Appendix B.

Those questions were:

1. What factors do you feel contributed to your remaining/leaving/failing the nursing program?
2. What do you feel were five major reasons contributing to other nursing students leaving your program?
3. What do you suggest should be done to retain students in associate degree nursing programs?
4. What five things do you feel faculty could do which would contribute to student success in completing an A.D.N. program?
5. What do you feel nursing students could do to contribute to their own success in completing an A.D.N. program?
6. What predictors (of twelve listed) are useful in identifying students who can complete a nursing program successfully?
7. What predictors (of five listed) are useful in identifying students who will pass the NCLEX-RN examination?

The data from the 115 completed questionnaires were collected and analysed . In the analysis of data, frequency tables were used to tally responses, to organize a great deal of valuable data and to display the frequency distribution of responses. This distribution allows the reader to quickly see what the lowest and highest responses were, where most of the responses tended to cluster and what the most frequently obtained responses were. The weighted responses were also rank ordered to determine the top five responses for each of the seven questions. The percentage frequency was used to show the percentage of the total sample choosing a particular response.

While five priority responses for each question were sought, as many as 26 to 30 factors were identified for questions within the survey. Because of the wealth of information obtained, tables were constructed which reported all

factors identified by graduates for each of the seven questions. These may be useful for other researchers and can be seen in the 35 tables in Appendix F (five tables for each of the seven questions in this study). The first table for each question summarizes the data for that particular question. This summary table combines the responses from the rural schools (A + E) and the combined responses from the urban schools (F + O); percentage frequency and weight is shown and the rank order of responses for all four schools is listed. The next four tables for each question represent the tally and rank order of responses for each of the four schools surveyed (Rural A, Rural E, Urban F, Urban O). The symbol (+) on these tables represents responses from graduates who passed a nursing program, the symbol (–) represents responses from graduates who failed the program and the symbol (/) represents those who failed the NCLEX-RN examination. Responses rated first in priority were given a weight of 5, responses second in priority were valued at 4, third priority were assigned a weight of 3, fourth priority equalled a weight of 2 and fifth in priority was assigned a weight of 1.

Although as can be seen in Appendix F a great deal of data has been obtained, this study reports only the responses representing the greatest frequencies and highest priorities. In that way, meaningful responses and comparisons of responses may be made between schools and between the responses of graduates and directors of nursing regarding factors that contribute to attrition and retention in associate degree nursing programs.

#### Research Question #1:

The first question in the questionnaire was:

What factors do you feel contributed to your remaining or leaving/failing the nursing program? Please list factors in order of priority. (Five response lines were made available to the respondent).



Table 7 reports the responses to this first question from the nursing program former students, by school, in order of priority.

Table 7				
Factors Contributing to Staying or Leaving				
	Rural A01	Rural E05	Urban F06	Urban 015
Desire to be RN	1st	1st	1st	1st
Determination Motivation Commitment	2nd	3rd	3rd	2nd
Peer + Family Support	3rd	2nd	2nd	3rd
Instructor Compassion Role modeling	4th	6th	7th	4th
Challenging Program	5th	4th	6th	5th
Satisfaction work with people	6th	7th		6th
Financial Aid Pell Grant Low tuition	7th	5th	4th	2nd
Realistic goals and priority setting	8th		9th	7th
Perseverance Hard work Tenacity		8th	5th	

Of the twenty seven responses to the first question, the nine listed in Table 7 were the most common. First in order of priority, graduates felt that the desire to be a nurse was the single most significant factor in students remaining or leaving/failing a nursing program. The next two most common factors were considered to be determination, motivation and commitment on the part of students followed by peer and family support. Four other factors, lower in priority but considered important by students for success within a nursing program included experiencing nursing faculty who are supportive, compassionate role models, being part of a challenging program, having financial aid, Pell grants and low tuition available at the college, and gaining satisfaction in working with people.

Other factors considered of some importance in retention according to graduates, ranking seventh or below in priority, were that students have realistic goals and set priorities while in school, and develop perseverance, tenacity and work hard.

#### Research Question #2:

The second question in this study addressed the following:

What do you feel were five major reasons contributing to other nursing students leaving your program? List reasons in order of priority. The following table, Table 8, lists the responses of participants of each school in order of priority.



Table 8				
Factors Contributing to Other Students Leaving/ Failing the Nursing Program				
RESPONSE	RURAL A01	RURAL A05	URBAN F06	URBAN 015
Stress of home life, school	1st	1st	1st	1st
Difficulty and stress of school, work	2nd	3rd	2nd	5th
Poor/Failing Grades	3rd	6th	6th	3rd
Lack of motivation, commitment	4th	5th	10th	7th
Lack of finances	5th	2nd	5th	4th
Lack of teacher encouragement , understanding	6th	4th	8th	4th
Overwhelmed by amount of work	7th	6th	3rd	2nd
Misunderstood role of nurse	6th	7th	4th	6th
Immaturity/Lack of confidence	13th	11th	7th	8th
Clinical Failure	8th	15th		10th
Lack of mentors and peer support		8th	10th	10th

As can be seen in the table above, graduates from all four schools considered the number one factor responsible for other nursing students leaving or failing a nursing program to be the stress of home life and stress related to school.

Other factors ranking high in priority as reasons for attrition, according to students were the difficulty and stress of school and/or work, poor/failing grades, lack of motivation and lack of finances. The remaining six factors related to nursing student attrition in descending order of priority were, lack of teacher encouragement and understanding, students overwhelmed by the amount of work, students misunderstood the role of the nurse, student immaturity/lack of confidence, clinical failure and last in priority as a reason was a lack of mentors and peer support.

### Research Question #3

Question number three in this survey was:

What do you suggest should be done to retain students in associate degree nursing programs? Please list five suggestions in order of priority.

Forty-one responses were offered for retaining nursing students. Table 9 lists the top eight priority suggestions identified by participants of the two rural and two urban nursing schools.

Examining the graduate responses listed in Table 9, indicates that for at least two schools, the number one priority for retention of students was to maximize financial aid resources. Also high on the priority list for retaining students were the suggestions to encourage study and support groups, and to encourage students to take the outside courses first. One urban school felt careful screening of applicants was a number one priority. Of some significance were the responses that faculty be more humanistic and caring, that they treat



Table 9				
Graduates' Suggestions for Retention				
RESPONSE	RURAL A01	RURAL E05	URBAN F06	URBAN 015
Maximize Financial Aid resources	1st	1st	2nd	3rd
Encourage Study/Support Groups	2nd	2nd	3rd	2nd
Encourage students taking outside courses first	3rd	4th	2nd	1st
More flexible class + clinical hours	3rd	5th		10th
Faculty be humanistic, caring, patient and available	3rd	1st	9th	5th
Increase time to practice clinical skills	4th	10th	11th	4th
Faculty treat all students equally and fairly	5th	3rd	10th	–
Tutorial services available to nurses	6th	8th	–	12th
Orient new students realistically (stress, time, etc.)	7th	6th	8th	6th
Faculty encouragement + reassurance for all	12th	6th	3rd	11th
Consideration for family illness + needs	9th	4th	5th	7th
Careful screening of applicants	8th	5th	1st	7th
Provide alternative ways to earn credit	15th	–	4th	–



students equally and fairly and also that more flexible class and clinical hours be offered.

Lower priority suggestions for retaining students included having tutorial services available, increasing clinical time, orienting new students realistically, careful screening of applicants, faculty encouragement and providing alternative ways to earn credit.

#### Research Question #4

The respondents were asked to prioritize what five things they felt faculty could do to contribute to student success. Their top five suggestions in order of priority are contained in Table 10.

Table 10	
Faculty Contributions to Student Success	
PRIORITY	
1st	Employ humor, praise and encouragement
2nd	More one-to one involvement of faculty and student
3rd	Faculty involvement in study and support groups
4th	Faculty relax, be approachable, compassionate, non-judging
5th	Faculty be understanding of student family needs

Other frequently suggested faculty contributions listed by graduates in descending order included, a) to conduct student-instructor study and support groups, b) faculty should be current in nursing practice, c) that tutoring should be available, and d) that outlines and study guides for lectures should be provided.

Suggestions offered by graduates ranked tenth in priority or lower were the following:

- support more than just the above-average student.
- encourage learning, not just memorization.
- decrease pressure on students to reduce work hours.
- provide more visual aids.
- arrange more student/faculty get-togethers.
- faculty should have unified expectations of students.
- faculty advisors should seek out students.
- have discussions rather than all lectures.
- never embarrass students in front of patients or peers.
- don't overwhelm students with paperwork.
- faculty tape (audio visual) each class, have it available to students.
- have early intervention for possible academic or clinical failure.
- have more than only multiple choice questions.

#### Research Question #5:

Question #5 on the survey asked graduates to prioritize what five contributions students could make toward their own success in an associate degree program. The results can be seen in Table 11.

Table 11	
Student Contributions Towards Own Success	
PRIORITY	
1st	Realistic view of program, commitment, maturity
2nd	Do support courses before entering nursing
3rd	Study groups
4th	Peer support groups
5th	Cut down work hours

Other ways in which students perceived they contributed to their own success, listed in order of priority, included: work in the health field for experience, organize time and keep up with studies – don't cram, take advantage of tutoring and counseling, maintain a positive attitude, seek the instructor's help when needed, be sure nursing is what you want, use the NCLEX Review books throughout the program, keep healthy (diet, exercise, relieve stress), prepare for clinical assignments, overcome fear of failure, practice relaxation techniques, develop strong family support, arrange for child care, practice clinical skills in the lab and finally simplify life, plan ahead and believe in self.

Research Question #6:

In question #6 of the survey, 12 predictors of student success in nursing programs that had been identified in the literature review were listed and students were asked to rate their usefulness. The top 5 predictors rated most useful by graduates of the four nursing programs can be seen in Table 12.



Table 12				
Students' Ratings of Predictors of Success in Nursing Programs				
SCHOOL	RURAL A01	RURAL E01	URBAN F06	URBAN 015
PREDICTOR				
Peer Study Groups	1st	1st	1st	2nd
Peer Tutoring	2nd	3rd	2nd	1st
Peer Support Groups	3rd	2nd	3rd	3rd
Pre-Admission Interview	4th	1st	4th	4th
Previous College Experience	5th	4th	5th	7th

Three of the most useful predictors of student success, according to these graduates of the associate degree nursing programs were: 1) peer study groups, 2) peer tutoring and 3) peer support groups. Graduates who responded in this survey considered pre-admission interviews and previous college experience as only somewhat useful as predictors of nursing student success.

Research Question #7:

The final survey question asked participators to rate the usefulness of five predictors located in the literature review towards success on the national registered nurse licensing examination (NCLEX-RN). Each of the four schools' ratings can be seen in Table 13.

Table 13				
Graduates' Ratings of Predictors of Success on NCLEX-RN				
SCHOOL	RURAL A01	RURAL E01	URBAN F06	URBAN 015
PREDICTOR				
NCLEX Review Course	3rd	1st	2nd	1st
Nursing Cumulative QPA	2nd	2nd	1st	3rd
NLN Achievement Test	1st	2nd	4th	2nd
Mosby Assess Test	4th	3rd	3rd	4th
Smith Computer Review	5th	4th	5th	4th

The predictors considered most useful for success on the NCLEX-RN examination according to these graduates are the nursing student's quality point average as well as results of the National League for Nursing Achievement Tests and attendance in an NCLEX review course. Two other predictors considered of some use are the Mosby Assess test and the Sandra Smith Computer Review.

#### Summary of Results

From the data collected by questionnaire from 115 nursing graduates from four associate degree nursing programs, the number one factor that graduates identified as a contributor to their success in the nursing program was the desire to be an R.N. Four other factors considered high in priority for success were motivation and commitment, family support, compassionate supportive faculty who are role models and a challenging program.



Major reasons identified by graduates in this study that contribute to students leaving or failing a nursing program include stress with school, work and homelife, poor or failing grades, overwhelmed by the amount of school work, lack of finances and lack of teacher support and understanding.

Suggestions for retention considered high in priority by the respondents in this study included maximizing financial resources, encouraging study and support groups, and encouraging students to take the outside courses before entering the nursing program.

According to graduates who responded in this survey, faculty can contribute to nursing student success by employing humor, praise and encouragement in their association with nursing students. Providing varied clinical experiences and becoming more involved with students on a one-to-one basis was also identified as a priority in faculty's contribution to student success.

Students can best help themselves toward success, according to the data collected in this study, by joining a study group, having a realistic view of the program, being mature and committed, and completing their support courses before entering nursing. Two other factors identified as important in the students' own success were 1) organizing their time effectively and 2) being members of peer support groups.

Of the twelve predictors of student success listed on the questionnaire, graduates in this survey selected five as most useful. They were 1) peer study groups, 2) peer tutoring, 3) peer support groups, 4) pre-admission interview and 5) previous college experience.

The most useful predictor of success on the NCLEX-RN exam, of the five listed on the questionnaire, was considered by graduates to be taking an NCLEX-RN review course. The second best predictor, according to graduates, was the nursing student's quality point average. The NLN Achievement Test and the



Mosby Assess Test were considered of some importance. The Smith Computer Review was considered least important by nursing graduate respondents as a predictor of passing the national registered nurse licensing examination.

## CHAPTER VI

### DISCUSSION

For the purpose of this study, identifying and prioritizing factors in success or failure in entering nursing, nursing graduates from four associate degree nursing programs, two from rural areas and two from urban communities, were surveyed. The survey, consisting of seven questions, sought the opinions of nursing graduates about factors that contribute to success or failure in nursing school and on the national licensing examination. In the first portion of this study, opinions had been sought from chairpersons of the fifteen Massachusetts associate degree nursing programs in order to enable comparisons between the graduates' responses, and those of the nursing program directors, regarding attrition, retention in nursing programs and success on the NCLEX-RN examination.

A second part of this study was to observe agreement or differences of opinions between nursing graduates from the two rural schools and the two urban schools.

In discussing the findings, the author will follow the order of the seven questions found on the questionnaire. Several written narratives were offered by nursing graduates in response to the survey questions and will be included in the discussion, since the intent of this research is exploratory.

The first question of the survey sought reasons the nursing students felt contributed to their remaining or leaving a nursing program. Some of the factors identified by students were unique in that they were not mentioned in the literature review or suggested as contributing factors for attrition by the chairpersons surveyed in the study. These factors include student determination, motivation, commitment, and a strong desire to be an RN. Further, respondents felt that besides peer and family support, compassionate instructors contribute to nursing students remaining in, or leaving, a program.

A challenging program and satisfaction in working with people were other factors, rated high in priority by students, that were not raised by directors of the four nursing programs surveyed.

The second question of the survey related to major reasons for nursing student attrition. The literature review, chairpersons' responses and nursing students' opinions from all four schools indicate that the number one reason for high attrition in associate degree nursing programs is pressure resulting from family commitment and responsibility and the stress associated with home life and school. The second and third major reasons for nursing student attrition, as identified by all sources in this study, are nursing course failure and inadequate finances.

Former nursing students prioritized lack of motivation and commitment on the part of the student as another significant factor related to attrition, as did the literature review. Other factors that have been identified from the literature review, from the chairpersons and the students, as reasons for nursing student attrition include lack of social or peer support, limited educational aspirations or aptitude and change in career due to misunderstanding the role of a nurse.

Two contributing factors for attrition mentioned by graduates that were not identified by directors or in the literature review were 1) lack of teacher



encouragement and 2) students feeling overwhelmed by the amount of work involved within the nursing program. One graduate actually responded with “you need to give up life for the duration of the program.”

Some factors listed by chairpersons as reasons for attrition were not ranked high in the students’ priorities. Those included academic issues like poor reading and math ability as well as social issues involving child care and working full time while in the nursing program.

One respondent who had failed a nursing program offered advice in handling future students who fail. The former student wrote:

When a student fails any semester in nursing, he or she would feel a lot better if the notice they get in the mail reads...please give this semester another try. We want you in our program.

The notice should not read...you have failed. That person is already stressed and tense enough and reading that does make them feel awfully BAD.

Both the graduates and the nursing chairs recommended strategies for retaining nursing students which were consistent with those found in the literature review. Peer study groups and positive, caring faculty were highest in priority, followed by quality advising and counseling, having orientations that deal with the nurse’s role, time and stress management and having tutorial assistance available. Encouraging students to take outside courses first was considered a high priority by respondents from all four nursing programs.

Several suggestions for retention involving faculty were offered by graduates. While these suggestions ranked lower in priority, they seem valuable to mention. Graduates suggested that faculty be humanistic, caring, patient and available. It was felt by the respondents that faculty must treat all students equally and fairly. There must be faculty encouragement and reassurance for all involved in the nursing program.

Interesting from a future community college planning perspective is that one of the top priorities students felt necessary for retention of nursing students was the maximization of financial aid resources. Several times in the responses the point was made that although faculty recommend that students work no more than 20 hours per week, “one cannot afford to work part-time and lose their family benefits such as medical, dental. There should be a better financial aid system.”

According to responses obtained to question four of this study, faculty can best contribute to student success by providing individual, caring and thorough advising. Responses from chairpersons and graduates regarding faculty contributions were similar, suggesting faculty be approachable, understanding, encouraging, non-judgmental, and employ a sense of humor.

It was felt by students that faculty can contribute to the success of nursing students by showing compassion and understanding of the students’ family needs. It was also suggested that more one to one involvement of faculty and student might contribute to nursing student retention and success.

Recommendations having to do with faculty involvement written in the responses to the survey included:

- don’t make students so afraid that they can’t learn.
- seek out the student who seems to need help.
- have advisor keep abreast of how things are going, both in and out of school.
- tell students when they do a good job;
- be approachable, no matter what the circumstances.

One of the graduate respondents wrote the following narrative to question four about faculty and their contribution:

There needs to be more one to one involvement with faculty and students so they can see where these people (students) are at. If faculty haven't heard from someone in awhile, don't assume that they are doing fine. They may be in trouble and not able to express it or able to find time at your (faculty) convenience, not theirs to make an appointment.

Further suggestions included frequent student faculty conferences, and encouragement of study groups. Chairpersons offered curriculum suggestions such as varied classroom strategies, critical thinking test questions and extra handouts. Graduates made only two recommendations concerning curriculum, first, that outlines and study guides be provided and second, that learning and not memorization be encouraged by faculty.

According to the data collected, nursing students can contribute to their own success by joining a study group, having a realistic view of the program, taking the support courses before entering nursing, organizing time effectively and seeking a peer support group. Besides these contributions, chairpersons gave further suggestions to students that included working only part-time, keeping up with their readings, taking advantage of college resources and being highly motivated.

The above factors were repeated over and over in extensive written narratives by several of the graduate respondents. Two excerpts follow:

I was an older student, taking only nursing courses. I was married with two children and both of us worked full-time. I had strong support at home and from my classmates who became goodfriends. I also purchased a home computer which was a tremendous aid.



I feel strongly that unless a student is in a position where they can devote all their time to school they should have at least most of the related coursework completed before starting the nursing program. If they have to work to support themselves and have family responsibilities to manage, in addition to other coursework (A&P, micro, etc) it is unlikely they will be successful.

Both chairpersons and graduates in this study prioritized predictors of student success in nursing that had been identified in the literature. Both chairpersons and graduates from all schools chose peer study, support groups and tutor groups as a top priority for nursing student success. Two other important predictors of student success were considered to be pre-admission interview and previous college experience.

Respondents also prioritized success predictors on the national licensing exam (NCLEX). Chairpersons considered the number one priority for success on NCLEX to be the nursing cumulative average while graduates felt an NCLEX review course to be most important, and the nursing grade point average second most important. Both groups rate the NLN Achievement Test as the third most important predictor followed by the Mosby Assessment Test. The Smith Computer Review was not considered a strong predictor of NCLEX success.

One nursing graduate did not select any of the five factors listed as NCLEX success predictors, but rather wrote a note to the researcher in answer to question seven. The note read:

My class was the 1st class to graduate with 100% pass rate on the NCLEX-RN exam. I believe our success was partly due to our comradry [sic] among students and a willingness to assist those having trouble. The average age of our class was older, most of us were seeking 2nd careers and were very serious about our nursing choice. The preparation at our school was very good and made the licensing exam that much easier.

## CHAPTER VII

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The stated purpose of this exploratory study was to find reasons for nursing student attrition in associate degree nursing programs and also to identify predictors of success for students in a nursing program and on the NCLEX-RN licensing examination. The viewpoints of chairpersons of associate degree nursing programs in Western Massachusetts and those of nursing graduates from 1985 through 1990, randomly selected from two rural and two urban ADN schools were sought through questionnaires.

Limitations already mentioned about this study include 1) the sample selected was one of convenience, 2) the chairpersons' sample size of 15 respondents was small, 3) the return rate of nursing graduate responses was only 29 percent and the categories of students who passed or failed nursing and failed NCLEX were not evenly distributed, 4) the questionnaire was used for the first time and needs to be tested for further validity and reliability, 5) some variables may not have been recognized or known by the respondents (i.e., National League for Nursing Achievement Test, Mosby Assessment Test), and 6) subjective opinions from only associate degree directors and graduates were sought, which limits the generalizability of information.

Despite these limitations, through this survey a great deal of valuable information has been suggested by nursing chairpersons and graduates about attrition and retention in associate degree nursing programs and predictors of success on the national licensing examination. Such data has not been reported previously in the literature on nursing education.

Even though respondents were free to write in at least five factors in answer to questions 1 through 5, surprisingly there were many similarities in factors listed by chairpersons and nursing graduates from all four ADN nursing programs.

### Summary

In summarizing the findings, it is clear that agreement exists between the chairpersons and graduates from the two urban and two rural schools surveyed that the three major reasons for nursing student attrition are 1) family responsibilities and the stress resulting in juggling homelife and school, 2) nursing course failure and 3) inadequate finances.

According to the data collected in this study, the highest ranked recommendations for retaining students were peer study groups, positive and caring faculty, followed by quality advising, encouraging students to take the outside courses first and having an orientation for students that includes education about the nurses role as well as emphasizing time and stress management skills.

Faculty contributors that assist students toward success include being approachable, understanding, caring, non-judgmental and employing a sense of humor. Other suggestions were that faculty encourage study groups and have frequent student faculty conferences.

Graduates recommend students can contribute to their own success by joining peer study, support and tutorial groups. Two other predictors of student



success in nursing education were considered to be pre-admission interviews and previous college experience.

Graduates and chairpersons together ranked peer study, support and tutor groups as a top priority for success in a nursing education program. Both groups also agreed that the number one predictor of success on the NCLEX-RN examination, of the five predictors listed, was an NCLEX review course.

Based on the findings of this study recommendations for nursing education, practice and research follow.

### Recommendations For Education

The following recommendations for nursing education are offered.

1. An orientation program should be held for potential nursing students before they enter the ADN program that includes:

- meeting the nursing faculty involved in the program.
- presenting a realistic view of the work involved in the program.
- showing a video that demonstrates the nurses' role within the hospital setting.
- explaining an option of a 3 year course of study.
- emphasizing the need for family support and financial security for the duration of the program.
- sharing graduates views that students can best help themselves by being highly motivated, committed and determined to work hard in a challenging program.
- assisting students in participating in peer study/support groups,
- offering seminars for students before entering the nursing program on stress, time management and study skills.

2. An orientation program for nursing faculty should be held each year, before nursing students enter the associate degree nursing program ,that includes:

- emphasizing that faculty and students working together can increase retention within a nursing program.
- considering the needs of the students as we teach understanding the need of clients.
- sharing graduates views of the contributions faculty can make toward student success including being positive, caring, encouraging and employing humor.
- presenting an overview to faculty of what the student needs to do to succeed, most especially joining a study/support group.
- designing a plan for frequent individualized student-faculty sessions initiated by faculty in order to assess a student's situation .
- identifying and counseling or tutoring high risk nursing students as early as three weeks into a semester.

3. Nursing programs might offer an NCLEX-RN review course to increase chances of success for students on the licensing examination.

4. Graduates who fail the national licensing examination and did not take a review course should be encouraged to do so.

5. Chairpersons of nursing programs should have exit interviews with nursing students leaving or failing the program in order to clearly identify factors that contribute to nursing program attrition.

## Recommendations for Nursing Practice

Recommendations for nursing practice include:

1. Professional practicing nurses must “care for their young” rather than “eat their young.”
2. Nursing students should begin encouraging one another in nursing school and carry this practice over into nursing practice.
3. Teachers and practitioners in the nursing practice setting must assess the needs of their students, peers and colleagues, just as they do their clients,
4. Nursing professionals should be (as new graduates recommend) supportive and non-judgmental of one another and employ a sense of humor.
5. Health care institutions might set up programs for lay people to work in the hospital setting and be able to witness what the role of the nurse involves, thus decreasing attrition in nursing programs because of a misunderstanding of that role, possibly a one credit course in pre-nursing.
6. Nursing practice settings need to be involved in assisting future RN employees by providing financial assistance for schooling in exchange for years of service or arranging work hours convenient to nursing school attendance.
7. When hiring new nursing graduates, practice settings might offer an incentive to work at their institution; specifically they might pay for an NCLEX-RN review course. Taking this course would increase the graduates’ chances of success in obtaining R.N. licensure. It would also save the hiring institution orientation monies that are lost if the graduates fail the licensing examination and either leave the institution or take on a lesser health care position.

## Recommendations For Nursing Research

The following are recommendations for further research.

1. Using the questionnaire from this study, survey associate degree nursing faculty from the four schools that participated to see if faculty views



about attrition and retention of nursing students are similar or different than nursing chairpersons and nursing graduates.

2. Survey associate degree nursing chairpersons, faculty and graduates from other areas beside Western Massachusetts about predictors of success in nursing and compare the results.

3. Administer the questionnaire of this study to baccalaureate degree nursing chairpersons, graduates and faculty to see if predictors of nursing school and licensing examination success are different in a four year nursing program.

4. Explore whether reasons for high attrition in programs like nursing are different from reasons in other programs that experience high attrition such as mathematics or engineering.

5. Follow a group of nursing students who belong to study/support groups and a group of students who remain isolated and compare both groups' attrition or retention rates in the nursing program.

6. Compare licensure results of Massachusetts associate degree graduates who took the registered nurse licensing examination after an NCLEX-RN review course with those who took the licensing examination without attending a review course.

7. Design a Likert-Scale Survey using the same questions from this study, but listing only the top five priorities identified for each question so that results can be more closely analysed by computer.

8. Institute the nursing orientation programs previously suggested into effect in one ADN program and compare attrition and retention with a similar ADN program that did not have the orientation programs but experienced similar attrition/retention rates.

9. Instruct one nursing faculty to meet advisees for academic counseling the usual college-established number of times. Have another nursing faculty

meet assigned students more frequently for personal or academic reasons. At the end of the semester compare attrition/retention between the control and experimental group.

11. Design and administer an attitude survey to incoming nursing freshmen, measuring predictors of success like motivation, determination and sense of challenge and compare results with students' attrition or retention within the program.

Community college nursing programs in the 1990s are educating the greater number of registered nurses in the nation, as the NLN data showed. These programs have been challenged by the changes in student population and by poor retention and high attrition rates. It is reasonable to believe that associate degree nursing programs of the next decade will be even more challenged and will need to be creative and dynamic in their efforts to retain and educate nursing students. The future nursing student population will be even more varied than it is now. More adult male and female learners will chose nursing. Increases in racial and ethnic minority applicants to nursing will occur as today's minority graduates enter practice and are viewed as role models. Veterans and adults from job-retraining programs will return to school; some will choose nursing because of its high job placement rate. Add to these challenges the fact that most community college students by the year 2000 are expected to attend college on a part time basis.

In preparation for these changes and challenges, more research, including the studies suggested in this dissertation, must be conducted in order to identify the future educational needs of such a versatile and non-traditional student population.

Facing this challenge requires that community college nursing programs must rapidly become proactive rather than reactive in discovering and

implementing effective educational practices to address the retention of students, and to improve success rates in associate degree nursing programs and on the national licensing examination. Good educational practice requires this, and so also does the nation's need for more registered nurses.



## APPENDIX A

### ADN CHAIRS' QUESTIONNAIRE

A.D.N. ATTRITION AND RETENTION QUESTIONNAIRE

Name of Chairperson \_\_\_\_\_

School \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Phone \_\_\_\_\_

Part I: INFORMATION ABOUT PROGRAM

1. What are the prerequisites for admission to your Associate Degree Nursing program?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. How many students do you admit per year? \_\_\_\_\_

3. What numerical grade is considered passing in your nursing courses?

Grade of \_\_\_\_\_%

4. How many credits are needed to earn an Associate Degree in Nursing at your institution?

Total credits \_\_\_\_\_

**Part II: INFORMATION ABOUT ATTRITION AND RETENTION AND  
PREDICTORS SUCCESS ON NCLEX**

1. What has your attrition rate been for the last four years?

1985 \_\_\_\_\_ %

1987 \_\_\_\_\_ %

1986 \_\_\_\_\_ %

1988 \_\_\_\_\_ %

2. Indicate at least five major reasons contributing to nursing student attrition in your program: (please list in order of priority).

1st \_\_\_\_\_

2nd \_\_\_\_\_

3rd \_\_\_\_\_

4th \_\_\_\_\_

5th \_\_\_\_\_

3. List successful strategies you use to retain nursing students in your program.

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4. Describe any additional retention practices you would like implemented in the future.

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5. Identify five things faculty do which contribute to student success in completing the nursing program. (Please list in order of priority below).

1. 

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2. 

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3. 

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4. 

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5. 

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6. Identify five things students do which contribute to student success in completing the nursing program. (Please list in order of priority).

1. 

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2. 

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3. 

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4. 

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5. 

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7. Listed below are possible predictors of student success in nursing programs. Please indicate the extent to which you think each predictor below is useful in identifying students who can complete the program successfully. (Circle one of the four ratings beside each predictor).

Predictor    1. Very Useful    2. Useful    3. Somewhat Useful    4. Not useful at all

High School Rank	1	2	3	4
ACT Scores	1	2	3	4
NLN Pre-nursing exam	1	2	3	4
SAT's	1	2	3	4
Pre Admission interview	1	2	3	4
Natural Science (College) QPA	1	2	3	4
Pre-nursing QPA	1	2	3	4
Previous college Experience	1	2	3	4
Age	1	2	3	4
Peer Tutoring	1	2	3	4
Peer Support Groups	1	2	3	4
Peer Study Groups	1	2	3	4

8. Listed below are possible predictors of graduates success on the NCLEX-RN exam. Please indicate the extent to which you think each predictor below is useful in identifying students who passed the NCLEX-RN exam. (Circle one of the four ratings beside each predictor).

Predictor    1. Very Useful    2. Useful    3. Somewhat Useful    4. Not useful at all

NLN Tests	1	2	3	4
Smith Review Computer	1	2	3	4
Mosby Assess Test	1	2	3	4
NCLEX Review Course	1	2	3	4
NSG. Cumulative Q.P.A.	1	2	3	4
Curriculum Q.P.A.1		2	3	4

Part III: INFORMATION ABOUT NURSING STUDENTS

1. Age Range:

1985 \_\_\_\_\_

1986 \_\_\_\_\_

1987 \_\_\_\_\_

1988 \_\_\_\_\_

2. Number of Students:

<u>Females</u>	<u>Males</u>	<u>L.P.N.'s</u>	<u>Minorities</u>
1985 _____	1985 _____	1985 _____	1985 _____
1986 _____	1986 _____	1986 _____	1986 _____
1987 _____	1987 _____	1987 _____	1987 _____
1988 _____	1988 _____	1988 _____	1988 _____

Full Time Attendance

1985 \_\_\_\_\_

1986 \_\_\_\_\_

1987 \_\_\_\_\_

1988 \_\_\_\_\_

Part Time Attendance

1985 \_\_\_\_\_

1986 \_\_\_\_\_

1987 \_\_\_\_\_

1988 \_\_\_\_\_

I would like a copy of the results from this survey.

Yes \_\_\_\_\_ No \_\_\_\_\_

Thank you very much for your valuable time and assistance in this project.

Eileen Neville

12/90



## APPENDIX B

### ADN STUDENT QUESTIONNAIRE

ASSOCIATE DEGREE IN NURSING ATTRITION AND  
RETENTION QUESTIONNAIRE

School Code \_\_\_\_\_

As many as 1500 nursing students leave Associate Degree Nursing Programs (A.D.N.) each year in Massachusetts alone. This study is interested in the opinion of those who left as well as those who completed an A.D.N. program.

This questionnaire should take no longer than fifteen minutes. Please complete by March 9, 1992 and return in the stamped self addressed envelope provided. Your opinions on attrition (leaving or failure) and retention (remaining) in A.D.N. programs will be taken very seriously. I appreciate your time and assure you that results from this research will be reported anonymously. Completing this questionnaire constitutes your acceptance in participating in this research project.

Part I: DEMOGRAPHIC INFORMATION

Place a check beside the response that best describes you when you were an A.D.N. student.

Gender

\_\_\_\_\_ Male  
\_\_\_\_\_ Female

Age Range

\_\_\_\_\_ 20 to 24  
\_\_\_\_\_ 25 to 29  
\_\_\_\_\_ 30 to 34  
\_\_\_\_\_ 35 to 39  
\_\_\_\_\_ 40 to 44  
\_\_\_\_\_ 45 or above

Marital Status

\_\_\_\_\_ Single  
\_\_\_\_\_ Married  
\_\_\_\_\_ Divorced  
\_\_\_\_\_ Widowed

Nursing Experience prior to  
ADN Education

\_\_\_\_\_ none  
\_\_\_\_\_ nurses aide \_\_\_\_\_ no. of yrs.  
\_\_\_\_\_ orderly \_\_\_\_\_ no. of yrs.  
\_\_\_\_\_ L.P.N. \_\_\_\_\_ no. of yrs.  
\_\_\_\_\_ other \_\_\_\_\_ no. of yrs.

School Code \_\_\_\_\_

Sources of finances for  
schooling.  
program.

Number of outside employment  
hours while in A.D.N.

(Check those that apply)

_____ self	_____ 0      10 hours/wk.
_____ scholarship	_____ 10 - 20 hours/wk.
_____ financial aid	_____ 20 - 30 hours/wk.
_____ veterans benefits	_____ 30 - 40 hours/wk.

Part II: INFORMATION ON ATTRITION, RETENTION AND  
PREDICTORS OR SUCCESS ON NCLEX

1. What factors do you feel contributed to your remaining or leaving/failing the nursing program: Please list factors in order of priority.

Remained

Left or failed

1st \_\_\_\_\_  
2nd \_\_\_\_\_  
3rd \_\_\_\_\_  
4th \_\_\_\_\_  
5th \_\_\_\_\_

1st \_\_\_\_\_  
2nd \_\_\_\_\_  
3rd \_\_\_\_\_  
4th \_\_\_\_\_  
5th \_\_\_\_\_

2. What do you feel were five major reasons contributing to other nursing students leaving your program? List reasons in order of priority.

1st \_\_\_\_\_  
2nd \_\_\_\_\_  
3rd \_\_\_\_\_  
4th \_\_\_\_\_  
5th \_\_\_\_\_



School Code \_\_\_\_\_

3. What do you suggest should be done to retain students in Associate Degree Nursing programs? Please list suggestions in order of priority.

1st \_\_\_\_\_

2nd \_\_\_\_\_

3rd \_\_\_\_\_

4th \_\_\_\_\_

5th \_\_\_\_\_

4. What five things do you feel faculty could do which would contribute to student success in completing an A.D.N. Nursing program? Please list feelings in order of priority.

1st \_\_\_\_\_

2nd \_\_\_\_\_

3rd \_\_\_\_\_

4th \_\_\_\_\_

5th \_\_\_\_\_

5. What do you feel nursing students could do to contribute to their own success in completing an A.D.N. Nursing program? Please list feelings in order of priority.

1st. \_\_\_\_\_

2nd \_\_\_\_\_

3rd \_\_\_\_\_

4th \_\_\_\_\_

5th \_\_\_\_\_

School Code \_\_\_\_\_

6. Listed below are possible predictors of student success in nursing programs. Please indicate the extent to which you think each predictor below is useful in identifying students who can complete the program successfully by circling one of the four ratings beside each predictor.

Predictor    1. Very Useful    2. Useful    3. Somewhat Useful    4. Not useful at all

Predictor	1. Very Useful	2. Useful	3. Somewhat Useful	4. Not useful at all
High School Rank	1	2	3	4
ACT 1 Scores	1	2	3	4
NLN Pre-Nsg. Exam	1	2	3	4
SAT's	1	2	3	4
Pre-Admission Interview	1	2	3	4
Natural Science (college) QPA	1	2	3	4
Pre-Nsg. QPA	1	2	3	4
Previous College Experience	1	2	3	4
Age	1	2	3	4
Peer Tutoring	1	2	3	4
Peer Support Group	1	2	3	4
Peer Study Group	1	2	3	4

School Code \_\_\_\_\_

7. Listed below are possible predictors of graduates success on the NCLEX-RN exam. Please indicate the extent to which you think each predictor below is useful in identifying students who passed the NCLEX-RN exam by circling one of the four ratings beside each predictor.

Predictor   1. Very Useful   2. Useful   3. Somewhat Useful   4. Not useful at all

---

NLN Test Achievement	1	2	3	4
Smith Review Computer	1	2	3	4
Mosby Assess Test	1	2	3	4
NCLEX Review Course	1	2	3	4
Nursing QPA Cumulative	1	2	3	4

Thank you very much for your valuable time and assistance in this research project.

Eileen Neville, R.N., M.S., C.S.  
Doctoral Candidate  
U. MA. Amherst



## APPENDIX C

### LETTER TO CHAIRS REQUESTING PARTICIPATION



## SPRINGFIELD TECHNICAL COMMUNITY COLLEGE



September 6, 1991



I am writing to ask for your participation in the second half of my research on Associate Degree Nursing Student Attrition and Retention in Massachusetts.

The first section of my study surveyed A.D.N. Nursing Chairpersons of Massachusetts. I will give you a copy of the results of that study at the MARILN meeting in September.

The next step in my dissertation proposal involves surveying nursing students, seeking their opinions on attrition and retention and comparing their views with the chairpersons. My dissertation committee has recommended that I select two urban and two rural schools and randomly choose students who have experienced failure, as well as success in A.D. nursing programs and on the NCLEX-RN exam. The colleges I hope will participate are: Berkshire Community College, Greenfield Community College, Holyoke Community College and Springfield Technical Community College. The years will include 1985-1990.

If you agree to participate, I would only need you to randomly select a certain number of student names, and addresses for and to co-sign a letter I will design, supporting my research. The letter along with a questionnaire will be sent to those students by me.

To explain this research further, I would like to meet with you for about 15 minutes at Holyoke Community College after the MARILN meeting and the consortium meeting on Thursday, September 12, 1991.

Eileen Neville, MS, RN, CS  
Chairperson, Nursing

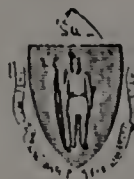
## APPENDIX D

### CHAIRPERSON'S SUPPORT LETTER TO NURSING STUDENTS





SPRINGFIELD TECHNICAL COMMUNITY COLLEGE



September 3, 1991

A colleague of mine is studying why associate degree nursing students fail or succeed in a nursing program or on the licensing exam. She is trying to pinpoint what could be done to assist students toward success in the future.

This colleague has already surveyed every ADN nursing director in Massachusetts and now wants to receive input from students and graduates of Massachusetts programs who have failed or passed a nursing program as well as the NCLEX exam.

Enclosed is a questionnaire I urge you to complete. To insure anonymity, all questionnaires are coded. No person or school will be mentioned in reporting the results. To further assure anonymity, questionnaires will be mailed to the researcher and not returned to your nursing program director. The deadline for return will be

Please participate and make a difference. Express what you feel your future colleagues education should be like in order to assist them toward success.

Thank you in advance for your participation.

## APPENDIX E

### CODING SYSTEM FOR QUESTIONNAIRES BY SCHOOL

## CODING SYSTEM FOR QUESTIONNAIRES BY SCHOOL

### Codes for Rural School A01 1988 - 1990

	<u>Failed Program</u>	<u>Passed Program and NCLEX</u>	<u>Failed NCLEX</u>
1985	85 A01 1/8 RP 85 A01 2/8 RP 85 A01 3/8 RP 85 A01 4/8 RP 85 A01 8/8 RP	88 A01 1/8 GB 88 A01 2/8 GB 88 A01 3/8 GB 88 A01 4/8 GB 88 A01 8/8 GB	88 A01 1/2 RB 88 A01 2/2 RB
1986	86 A01 1/8 RP 86 A01 2/8 RP 86 A01 3/8 RP 86 A01 4/8 RP 86 A01 8/8 RP	86 A01 1/8 GB 86 A01 2/8 GB 86 A01 3/8 GB 86 A01 4/8 GB 86 A01 8/8 GB	86 A01 1/2 RB
1987	87 A01 1/8 RP 87 A01 2/8 RP 87 A01 3/8 RP 87 A01 4/8 RP 87 A01 8/8 RP	87 A01 1/8 GB 87 A01 2/8 GB 87 A01 3/8 GB 87 A01 4/8 GB 87 A01 8/8 GB	87 A01 1/6 RB 87 A01 2/6 RB 87 A01 3/6 RB 87 A01 4/6 RB 87 A01 8/6 RB 87 A01 6/6 RB
1988	88 A01 1/8 RP 88 A01 2/8 RP 88 A01 3/8 RP 88 A01 4/8 RP 88 A01 5/8 RP	88 A01 1/8 GB 88 A01 2/8 GB 88 A01 3/8 GB 88 A01 4/8 GB 88 A01 8/8 GB	88 A01 1/3 RB 88 A01 2/3 RB 88 A01 3/3 RB
1989	89 A01 1/8 RP 89 A01 2/8 RP 89 A01 3/8 RP 89 A01 4/8 RP 89 A01 8/8 RP	89 A01 1/8 GB 89 A01 2/8 GB 89 A01 3/8 GB 89 A01 4/8 GB 89 A01 8/8 GB	89 A01 1/2 RB 89 A01 2/2 RB
1990	90 A01 1/8 RP 90 A01 2/8 RP 90 A01 3/8 RP 90 A01 4/8 RP 90 A01 8/8 RP	90 A01 1/8 GB 90 A01 2/8 GB 90 A01 3/8 GB 90 A01 4/8 GB 90 A01 8/8 GB	90 A01 1/1 RB



# Codes for Rural School E05 1985 - 1990

	<u>Failed Program</u>	<u>Passed Program and NCLEX</u>	<u>Failed NCLEX</u>
1985	85 E05 1/8 RP 85 E05 2/8 RP 85 E05 2/8 RP 85 E05 2/8 RP 85 E05 2/8 RP	85 E05 1/8 GB 85 E05 2/8 GB 85 E05 3/8 GB 85 E05 4/8 GB 85 E05 8/8 GB	85 E05
1986	86 E05 1/8 RP 86 E05 2/8 RP 86 E05 3/8 RP 86 E05 4/8 RP 86 E05 8/8 RP	86 E05 1/8 GB 86 E05 2/8 GB 86 E05 3/8 GB 86 E05 4/8 GB 86 E05 8/8 GB	86 E05
1987	87 E05 1/8 RP 87 E05 2/8 RP 87 E05 3/8 RP 87 E05 4/8 RP 87 E05 8/8 RP	87 E05 1/8 GB 87 E05 2/8 GB 87 E05 3/8 GB 87 E05 4/8 GB 87 E05 8/8 GB	87 E05 1/6 RB 87 E05 2/6 RB
1988	88 E05 1/8 RP 88 E05 2/8 RP 88 E05 3/8 RP 88 E05 4/8 RP 88 E05 8/8 RP	88 E05 1/8 GB 88 E05 2/8 GB 88 E05 3/8 GB 88 E05 4/8 GB 88 E05 8/8 GB	88 E05 1/3 RB
1989	89 E05 1/8 RP 89 E05 2/8 RP 89 E05 3/8 RP 89 E05 4/8 RP 89 E05 8/8 RP	89 E05 1/8 GB 89 E05 2/8 GB 89 E05 3/8 GB 89 E05 4/8 GB 89 E05 8/8 GB	89 E05 1/7 RB 89 E05 2/7 RB 89 E05 3/7 RB 89 E05 4/7 RB 89 E05 8/7 RB 89 E05 6/7 RB 89 E05 7/7 RB
1990	90 E05 1/8 RP 90 E05 2/8 RP 90 E05 3/8 RP 90 E05 4/8 RP 90 E05 8/8 RP	90 E05 1/8 GB 90 E05 2/8 GB 90 E05 3/8 GB 90 E05 4/8 GB 90 E05 8/8 GB	90 E05 1/4 RB 90 E05 2/4 RB 90 E05 3/4 RB 90 E05 4/4 RB

Codes for Urban School F06  
1985 - 1990

	<u>Failed Program</u>	<u>Passed Program and NCLEX</u>	<u>Failed NCLEX</u>
1985	85 F06 1/8 RP 85 F06 2/8 RP 85 F06 2/8 RP 85 F06 2/8 RP 85 F06 2/8 RP	85 F06 1/8 GB 85 F06 2/8 GB 85 F06 3/8 GB 85 F06 4/8 GB 85 F06 8/8 GB	88 F06 1/1 RB
1986	86 F06 1/8 RP 86 F06 2/8 RP 86 F06 3/8 RP 86 F06 4/8 RP 86 F06 8/8 RP	86 F06 1/8 GB 86 F06 2/8 GB 86 F06 3/8 GB 86 F06 4/8 GB 86 F06 8/8 GB	86 F06 1/2 RB 86 F06 2/2 RB
1987	87 F06 1/8 RP 87 F06 2/8 RP 87 F06 3/8 RP 87 F06 4/8 RP 87 F06 8/8 RP	87 F06 1/8 GB 87 F06 2/8 GB 87 F06 3/8 GB 87 F06 4/8 GB 87 F06 8/8 GB	87 F06
1988	88 F06 1/8 RP 88 F06 2/8 RP 88 F06 3/8 RP 88 F06 4/8 RP 88 F06 8/8 RP	88 F06 1/8 GB 88 F06 2/8 GB 88 F06 3/8 GB 88 F06 4/8 GB 88 F06 8/8 GB	88 F06 1/8 RB 88 F06 2/8 RB 88 F06 3/8 RB 88 F06 4/8 RB 88 F06 8/8 RB
1989	89 F06 1/8 RP 89 F06 2/8 RP 89 F06 3/8 RP 89 F06 4/8 RP 89 F06 8/8 RP	89 F06 1/8 GB 89 F06 2/8 GB 89 F06 3/8 GB 89 F06 4/8 GB 89 F06 8/8 GB	89 F06 1/6 RB 89 F06 2/6 RB 89 F06 3/6 RB 89 F06 4/6 RB 89 F06 8/6 RB 89 F06 6/6 RB
1990	90 F06 1/8 RP 90 F06 2/8 RP 90 F06 3/8 RP 90 F06 4/8 RP 90 F06 8/8 RP	90 F06 1/8 GB 90 F06 2/8 GB 90 F06 3/8 GB 90 F06 4/8 GB 90 F06 8/8 GB	90 F06 1/4 RB 90 F06 2/4 RB 90 F06 3/4 RB 90 F06 4/4 RB

Codes for Urban School O15  
1985 - 1990

	<u>Failed Program</u>	<u>Passed Program and NCLEX</u>	<u>Failed NCLEX</u>
1985	85 O15 1/8 RP	85 O15 1/8 GB	88 O15 1/4 RB
	85 O15 2/8 RP	85 O15 2/8 GB	88 O15 2/4 RB
	85 O15 2/8 RP	85 O15 3/8 GB	88 O15 3/4 RB
	85 O15 2/8 RP	85 O15 4/8 GB	88 O15 4/4 RB
	85 O15 2/8 RP	85 O15 8/8 GB	
1986	86 O15 1/8 RP	86 O15 1/8 GB	86 O15
	86 O15 2/8 RP	86 O15 2/8 GB	
	86 O15 3/8 RP	86 O15 3/8 GB	
	86 O15 4/8 RP	86 O15 4/8 GB	
	86 O15 8/8 RP	86 O15 8/8 GB	
1987	87 O15 1/8 RP	87 O15 1/8 GB	87 O15 1/3 RB
	87 O15 2/8 RP	87 O15 2/8 GB	87 O15 2/3 RB
	87 O15 3/8 RP	87 O15 3/8 GB	87 O15 3/3 RB
	87 O15 4/8 RP	87 O15 4/8 GB	
	87 O15 8/8 RP	87 O15 8/8 GB	
1988	88 O15 1/8 RP	88 O15 1/8 GB	88 O15 1/8 RB
	88 O15 2/8 RP	88 O15 2/8 GB	88 O15 2/8 RB
	88 O15 3/8 RP	88 O15 3/8 GB	88 O15 3/8 RB
	88 O15 4/8 RP	88 O15 4/8 GB	88 O15 4/8 RB
	88 O15 8/8 RP	88 O15 8/8 GB	88 O15 8/8 RB
1989	89 O15 1/8 RP	89 O15 1/8 GB	89 O15 1/8 RB
	89 O15 2/8 RP	89 O15 2/8 GB	89 O15 2/8 RB
	89 O15 3/8 RP	89 O15 3/8 GB	89 O15 3/8 RB
	89 O15 4/8 RP	89 O15 4/8 GB	89 O15 4/8 RB
	89 O15 8/8 RP	89 O15 8/8 GB	89 O15 8/8 RB
1990	90 O15 1/8 RP	90 O15 1/8 GB	90 O15 1/3 RB
	90 O15 2/8 RP	90 O15 2/8 GB	90 O15 2/3 RB
	90 O15 3/8 RP	90 O15 3/8 GB	90 O15 3/3 RB
	90 O15 4/8 RP	90 O15 4/8 GB	
	90 O15 8/8 RP	90 O15 8/8 GB	



## APPENDIX F

### DATA TABLES

## DATA TABLES

### NOTE:

For each of the questions used in the survey this appendix contains a data summary sheet, followed by four data sheets. Each of the four data sheets shows the responses of one of the schools to that question. Each data summary sheet is identified by the number of the question (e.g. Question 1) being responded to.

The abbreviations used on the data summary sheets are as follows:

- The first column contains responses.
- The second column contains the combined response frequency of the rural schools, abbreviated as FQ.F&O.
- The third column contains the combined rank order of responses of the rural schools, abbreviated as RNK.F&O.
- The fourth column contains the combined weight of the responses of the rural schools, abbreviated as %WT.F&O.
- The fifth column contains the combined response frequency of the urban schools, abbreviated as FQ.A&E.
- The sixth column contains the combined rank order of responses of the urban schools, abbreviated as RNK.A&E.
- The seventh column contains the combined weight of responses of the urban schools, abbreviated as %WT.A&E.
- The eighth column contains the combined response frequency for the four schools, abbreviated as FQ4SCH.
- The ninth column contains the combined rank order of responses for the four schools, abbreviated as RNK4SCH.
- The tenth column contains the combined weight of responses for the four schools, abbreviated as %WT4SCH.

Students' Perceived Factors in Retention, Question 1, Data Summary*									
	FQ.F&O	RNKF&O	%WTF&O	FQW.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Desire To Be RN	wt127	1st	.182	wt214	1st	.308	wt351	1st	.243
Dedication, Determination	wt117	3rd	.156	wt113	2nd	.163	wt230	2nd	.163
Support of family, peers, friends	wt118	2nd	.157	wt96	3rd	.138	wt214	3rd	.148
Financial Aid, Grants	wt107	4th	.142	wt33	6th	.047	wt140	4th	.097
Supportive Instructors	wt64	5th	.085	wt54	4th	.078	wt118	5th	.082
Challenging Program	wt61	6th	.081	wt49	5th	.071	wt110	6th	.076
Happy to work with people	wt24	8th	.032	wt33	6th	.047	wt57	7th	.039
Hard work, tenacity	wt25	7th	.033	wt9	10th	.013	wt34	8th	.023
Realistic goals, setting priorities	wt13	9th	.017	wt15	7th	.002	wt28	9th	.019
Past nursing experience	st13	9th	.017	wt12	9th	.017	wt25	10th	.017
Spread courses over three years	wt13	9th	.017	wt7	11th	.010	wt20	11th	.014
Good clinical experience	wt7	13th	.009	wt7	11th	.010	wt14	13th	.010
Age, maturity, belief in self	wt11	10th	.015	wt4	13th	.006	wt15	12th	.010
Prior educational experience	wt7	13th	.009	wt6	12th	.009	wt13	14th	.009

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Question 1 Data Summary, continued

	FQ.F&O	RNKF&O	%WTF&O	FQ.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Transport, easy access	wt9	11th	.012	wt4	13th	.006	wt13	14th	.009
Use of tutors				wt13	8th	.019	wt13	14th	.009
Employer support	wt8	12th	.011	wt3	14th	.004	wt11	15th	.008
Didn't have to work while in school				wt9	10th	.013	wt9	15th	.006
Short duration of program	wt3	15th	.004	wt4	13th	.006	wt7	16th	.005
Children were older, set good example	wt4	14th	.005	wt3	14th	.004	wt7	16th	.005
Peer study groups	wt7	13th	.009				wt7	16th	.005
Evening classes				wt4	13th	.006	wt4	17th	.003
Well written nursing texts				wt2	15th	.003	wt2	18th	.001
Affordable childcare				wt1	16th	.001	wt1	19th	.001
Computer assignments	wt2	16th	.003				wt2	18th	.001
Assist from Women's Center	wt2	16th	.003				wt2	18th	.001
TOTAL	wt 752			wt695			wt1447		

\* See Note explaining coding on first page of Appendix F.

Rural A, Students' Perceived Factors in Retention, Question 1, Part 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Desire To Be RN	12+ - - /	+ + - /	= -	+	+ + -	wt125	1st
Dedication Determination	5 + - - /	+++++ /	-	++		wt67	2nd
Support of Family, Peers, friends	+	++ /	9+	+	+++++	wt45	3rd
Financial Aid, Grants		+++++			+	wt17	7th
Supportive Instructors	+	+++++	+++++ -	+	+	wt39	4th
Challenging Program	++ -	++ -	+ - /	+++		wt32	5th
Happy to work with people		+ -	+	- - /	++	wt19	6th
Hard work, tenacity							
Realistic goals, setting priorities	++		+	-		wt15	8th
Past nursing experience		+		++		wt8	11th
Spread courses over three years			+		+	wt4	12th
Good clinical experience			+		+	wt4	12th
Age, maturity, belief in self							
Prior educational experience				+		wt2	14th
Transport, easy access				++		wt4	12th
Use of tutors		+++			+	wt13	9th
Employer support				+	+	wt3	13th

Continued, next page

Rural A, Question 1, Part 2, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Didn't have to work while in school	+			++		wt9	10th
Short duration of program							
Children were older, set good example							
Peer study groups							
Evening classes		+				wt4	12th
Well written nursing texts							
Affordable childcare							
Computer assignments							
Assist from Women's Center							
Student responses    Priority Wt.    1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
(+) = passed program; ( - ) = failed program; ( / ) = failed NCLEX.							



Rural E, Students' Perceived Factors in Retention, Question 1, Part 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Desire To Be RN	12+ - - /		+++	++	/	wt89	1st
Dedication Determination	7 + //		/	/	+	wt46	3rd
Support of Family, peers, friends	++++	+///	+ - /	++	++	wt51	2nd
Financial Aid,Grants		+++	-		/	wt16	5th
Supportive Instructors	++++	+///	+ - /	++	++	wt51	2nd
Challenging Program		+ - /	+	-		wt17	4th
Happy to work with people	/	+	-	+		wt16	7th
Hard work, tenacity							
Realistic goals, setting priorities	++		+	-		wt15	8th
Past nursing experience			+			wt4	9th
Spread courses over three years			+			wt3	10th
Good clinical experience			+			wt3	10th
Age, maturity, belief in self		+				wt4	9th
Prior educational experience		+				wt4	9th
Transport, easy access							
Use of tutors							
Employer support		+		+		wt6	9th

Continued, next page

Rural E, Question 1, Part 2, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Didn't have to work while in school							
Short duration of program		+		+		wt6	9th
Children were older, set good example		+				wt3	10th
Peer study groups							
Evening classes							
Well written nursing texts				+		wt2	11th
Affordable childcare					+	wt1	12th
Computer assignments							
Assist from Women's Center				+		wt2	12th
Student responses    Priority Wt.    1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
(+) = passed program; ( - ) = failed program; ( / ) = failed NCLEX.							

Urban F, Students' Perceived Factors in Retention, Question 1, Part 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Desire To Be RN	7+/-		+++	++		wt57	1st
Dedication Determination	+++ -	++	+	+ -	+	wt36	3rd
Support of Family, peers, friends	+++	++++	+ ++	+/-	++ -	wt47	2nd
Financial Aid, Grants	++ -	+/-		+	/	wt26	4th
Supportive Instructors	+++	++++	+++	+/-	++ -	wt47	2nd
Challenging Program		++/-		+		wt14	6th
Happy to work with people		+	/			wt7	10th
Hard work, tenacity	+++	+	+/-			wt25	5th
Realistic goals, setting priorities		+			+	wt5	11th
Past nursing experience	++					wt10	8th
Spread courses over three years			+	+		wt5	11th
Good clinical experience							
Age, maturity, belief in self		+	+		+	wt8	9th
Prior educational experience							
Transport, easy access		-				wt4	12th
Use of tutors							
Employer support				+		wt2	13th

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Didn't have to work while in school							
Short duration of program							
Children were older, set good example			+		+	wt4	12th
Peer study groups			+		+	wt4	12th
Evening classes							
Well written nursing texts							
Affordable childcare							
Computer assignments				+		wt2	13th
Assist from Women's Center							
Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.							

Urban O, Students' Perceived Factors in Retention, Question 1, Part 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Desire To Be RN	6+ 4 -	++ - - -	-	- -	- - -	wt80	1st
Dedication Determination	5 + 7 -	+++	+ -	-	/	wt81	2nd
Support of Family, peers, friends	+++++	+++ -	4 + 5 -	+	+	wt71	3rd
Financial Aid,Grants				+++	++	wt81	2nd
Supportive Instructors	+++	++ - - -	+++++ -	+	-	wt53	4th
Challenging Program	+ -	6+ -	+ /		++ -	wt47	5th
Happy to work with people	/	+	-	- -	+	wt17	6th
Hard work, tenacity							
Realistic goals, setting priorities		-			+ -	wt8	7th
Past nursing experience			+			wt3	11th
Spread courses over three years		- -				wt8	7th
Good clinical experience			-	/	++	wt7	8th
Age, maturity, belief in self			+			wt3	11th
Prior educational experience	-			-		wt7	8th
Transport, easy access			+	+		wt5	10th
Use of tutors							
Employer support		+	.	+		wt6	9th

Continued, next page

Urban O, Question 1, Part 2, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Didn't have to work while in school							
Short duration of program			+			wt3	11th
Children were older, set good example							
Peer study groups			-			wt3	11th
Evening classes							
Well written nursing texts							
Affordable childcare							
Computer assignments							
Assist from Women's Center				+		wt2	12th
Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.							



Students' Perceived Factors in Attrition, Question 2, Data Summary*									
	FQ.F&O	RNKF&O	%WTF&O	FQW.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Home/work stress	wt176	1st	.231	wt131	1st	.199	wt307	1st	.199
Difficulty of course work	wt77	3rd	.100	wt111	2nd	.142	wt188	2nd	.122
Lack of finances	wt66	4th	.087	wt93	3rd	.119	wt159	3rd	.103
Poor/failing grades	wt63	5th	.083	wt66	4th	.084	wt129	4th	.084
Lack of motivation, commitment	wt28	7th	.037	wt63	5th	.081	wt91	5th	.059
Lack of teacher encouragement	wt54	6th	.090	wt55	6th	.070	wt109	6th	.071
Misunderstood role of nurse	wt63	5th	.083	wt41	7th	.052	wt104	7th	.067
Overwhelmed by amount of work	wt89	2nd	.117	wt36	8th	.046	w125	8th	.081
Clinical failure	wt12	11th	.015	wt21	9th	.027	wt33	9th	.021
Lacking or poor study habits	wt12	11th	.010	wt15	10th	.019	wt27	10th	.018
Immaturity/ Lack confidence	wt33	6th	.040	wt15	10th	.019	wt48	10th	.031
Lack of mentors/peer/support groups	wt17	8th	.022	wt14	11th	.018	wt31	11th	.020
Pressure to perform				w1t4	11th	.018	wt14	11th	.009
Attempt program in two years	wt14	10th	.013	wt14	11th	.018	wt28	11th	.018

Continued, next page

Question 2, Data Summary, continued

	FQ.F&O	RNKF&O	%WTF&O	FQ.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Classtime conflicts w. life				wt12	12th	.015	wt12	12th	.008
No previous health background	wt8	12th	.010	wt11	13th	.014	wt19	13th	.012
Weakness in math	wt3	15th	.003	wt10	14th	.013	wt13	14th	.008
Lack of support outside school	wt6	14th	.007	wt8	15th	.010	wt14	15th	.009
Poor health	wt15	9th	.003	wt8	15th	.010	wt23	15th	.015
Poor test taking skills				wt8	15th	.010	wt8	15th	.005
Too little clinical experience	wt14	10th	.020	wt8	15th	.010	wt22	15th	.014
Childcare problems				wt6	16th	.008	wt6	16th	.018
Transportation problems				wt6	16th	.008	wt6	16th	.004
No leisure time for basic needs	wt6	14th	.007			.007	wt6	17th	.004
Alcohol/drug related problems				wt5	17th	.006	wt5	18th	.003
Lack prior college experience	wt7	13th	.005				wt6	17th	.005
Insufficient lab skills				wt4	18th	.005	wt4	19th	.003
Lack organizational skills				wt3	19th	.004	wt3	20th	.002
Poor experience with hospital staff				wt1	20th	.001	wt1	21st	.006
TOTAL	wt763			wt779			wt1542		

\* See Note explaining coding on first page of Appendix F.

Rural A, Students' Perceived Factors in Attrition, Question 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Home/work stress	4+ - - -	++++	++++ -	++	-	wt75	1st
Difficulty of course work	+++	3+ - - - /	+ -	++++	+	wt58	2nd
Lack of finances	+	6+ /	+ -	+ -	+++	wt38	5th
Poor/failing grades	8+	+ -	++	+	+	wt57	3rd
Lack of motivation, commitment	++ -	+++ - /	+ /	+	+	wt44	4th
Lack of teacher encouragement	++ -		++	-	+++	wt26	6th
Misunderstood role of nurse	++ /	-	++		+	wt26	6th
Overwhelmed by amount of work	- /	++		+ /		wt18	7th
Clinical failure			+++	++++		wt17	8th
Lacking or poor study habits			+ -			wt6	14th
Immaturity/ Lack confidence			-	+ /		wt7	13th
Lack of mentors/peer/support groups							
Pressure to perform			+			wt3	16th
Attempt program in two years	- -	-				wt14	9th

Continued, next page



	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Classtime conflicts w. life		++ -				wt12	10th
No previous health background		++	-			wt11	11th
Weakness in math	+ -					wt10	12th
Lack of support outside school		+	+		+	wt8	12th
Poor health		+	+	+	+	wt6	14th
Poor test taking skills		+		/		wt8	11th
Too little clinical experience				+	+ -	wt4	15th
Childcare problems			+	+	/	wt6	13th
Transportation problems			-			wt3	16th
No leisure time for basic needs							
Alcohol/drug related problems	+					wt5	14th
Lack prior college experience							
Insufficient lab skills		+				wt4	15th
Lack organizational skills			+			wt3	16th
Poor experience with hospital staff					+	wt1	18th

Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.  
 Student responses: (+) = passed program. (-) = failed program. (/) = failed NCLEX.

Rural E, Students' Perceived Factors in Attrition, Question 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Home/work stress	+ - /	+++ - /	++ - /	+ /		wt56	1st
Difficulty of course work	+++ -- /	+++	+ /	+	- //	wt53	3rd
Lack of finances	+ - /	++++ - /	+ -	++++ /	++	w55	2nd
Poor/failing grades	+	-				wt9	9th
Lack of motivation, commitment	++		+ -	+	+	wt19	5th
Lack of teacher encouragement	++ -	+ /		++ -		wt29	4th
Misunderstood role of nurse	+	+	+	-	+	wt15	7th
Overwhelmed by amount of work	++	+		+ /		wt18	6th
Clinical failure		+				wt14	5th
Lacking or poor study habits	+			++		wt9	10th
Immaturity/ Lack confidence			+ -	-		wt8	11th
Lack of mentors/peer/support groups	- /		+		-	wt14	8th
Pressure to perform		++	+			wt11	9th
Attempt program in two years							

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Classtime conflicts w. life							
No previous health background							
Weakness in math							
Lack of support outside school		+	+		+	wt8	12th
Poor health				+		w2	17th
Poor test taking skills	+		/			wt8	11th
Too little clinical experience			+		+	wt4	15th
Childcare problems			+	+	/	wt6	13th
Transportation problems			+			wt3	16th
No leisure time for basic needs							
Alcohol/drug related problems	+					wt5	14th
Lack prior college experience							
Insufficient lab skills		+				wt4	15th
Lack organizational skills							
Poor experience with hospital staff					+	wt1	18th
Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1. Student responses: (+) = passed program. (-) = failed program. (/) = failed NCLEX.							



Urban F, Students' Perceived Factors in Attrition, Question 2							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Home/work stress	7+	+++ -	++ -	++	+	wt70	1st
Difficulty of course work	+++++	++	+++			wt39	2nd
Lack of finances		++	4+ -	+ -	+	w27	2nd
Poor/failing grades	+	++ -	++	+	+	wt17	6th
Lack of motivation, commitment			-	+	+ -	wt5	10th
Lack of teacher encouragement		+ -	+	+ -	+++	wt15	8th
Misunderstood role of nurse	+++	+	+	++	++	wt28	4th
Overwhelmed by amount of work	++ -	++	++	++	+	wt34	3rd
Clinical failure							
Lacking or poor study habits					++	wt2	13th
Immaturity/ Lack confidence	+ -		+	+	+	w16	7th
Lack of mentors/peer/support groups		+	+		+	wt5	10th
Pressure to perform							
Attempt program in two years					+	wt1	14th

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Classtime conflicts w. life							
No previous health background		+	-			wt4	11th
Weakness in math			+			wt3	12th
Lack of support outside school		+		+	+	wt6	9th
Poor health			++	+	+	w6	9th
Poor test taking skills							
Too little clinical experience		+				wt4	11th
Childcare problems							
Transportation problems							
No leisure time for basic needs				+		wt2	13th
Alcohol/drug related problems							
Lack prior college experience				+		wt2	13th
Insufficient lab skills		+				wt4	15th
Lack organizational skills							
Poor experience with hospital staff							
Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1. Student responses: (+) = passed program. (-) = failed program. (/) = failed NCLEX.							

Urban O, Students' Perceived Factors in Attrition, Question 2 *							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Home/work stress	4+ 5 -	5+ 5- /	++ - -	6+	++ -	wt106	1st
Difficulty of course work	++ /	+	++++ -	-	--	wt38	5th
Lack of finances	+ -	++	3+ ---		+++	w39	4th
Poor/failing grades	4+ - -	+	---	-	+	wt46	3rd
Lack of motivation, commitment	+	+ -	++	+ -		w23	7th
Lack of teacher encouragement	--	+++ -	++ - -		/	wt39	4th
Misunderstood role of nurse	+	++	++ - - - /	+	++	wt35	6th
Overwhelmed by amount of work	4+ 2-	++ - /	+	---	+	wt55	2nd
Clinical failure	-	-	+			wt12	10th
Lacking or poor study habits	-		+	+		wt10	11th
Immaturity/ Lack confidence	+	+ -		+	++	w17	8th
Lack of mentors/peer/sup port groups	-	-		+	-	wt12	10th
Pressure to perform							
Attempt program in two years	+ -			/	+	wt13	9th

Continued, next page



	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Classtime conflicts w. life							
No previous health background		+				wt4	14th
Weakness in math			+			wt3	12th
Lack of support outside school		+		+	+	wt6	9th
Poor health		-	-	+	-	w9	12th
Poor test taking skills							
Too little clinical experience				---/	--	wt10	11th
Childcare problems							
Transportation problems							
No leisure time for basic needs		-				w4	14th
Alcohol/drug related problems							
Lack prior college experience	-					wt5	13th
Insufficient lab skills		+				wt4	15th
Lack organizational skills							
Poor experience with hospital staff							
Priority Wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1. Student responses: (+) = passed program. (-) = failed program. (/) = failed NCLEX.							

Students' Suggestions for Retention, Question 3, Data Summary *									
	FQ.F&O	RNK F&O	%WT F&O	FQ..A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Max. financial aid	wt44	3rd	.084	wt97	1st	.1355	wt141	1st	.113
Take outside courses 1st	wt85	1st	.162	wt43	3rd	.060	wt128	2nd	.103
Study/support groups	wt56	2nd	.107	wt61	2nd	.085	wt117	3rd	.094
Available, caring and patient faculty	wt22	7th	.042	wt61	2nd	.085	wt83	4th	.067
Screen applicants	wt39	4th	.074	wt30	9th	.042	wt69	5th	.056
More time to practice skills	wt25	5th	.048	wt33	7th	.046	wt58	6th	.047
Flexible class and clinical hours	wt11	13th	.021	wt42	4th	.058	wt53	8th	.043
Consideration of family needs	wt25	5th	.048	wt29	10th	.040	wt54	7th	.043
Faculty treat students equally	wt5	16th	.010	wt41	5th	.057	wt46	9th	.037
Orient students realistically	wt23	6th	.044	wt35	6th	.049	wt58	6th	.047
Tutors for nurses	wt8	15th	.015	wt32	8th	.045	wt40	11th	.032
Faculty reassurance for all	wt19	8th	.036	wt25	11th	.035	wt44	10th	.035
Available childcare	wt12	12th	.023	wt20	12th	.028	wt32	13th	.026
Early ID and assist weak students	wt11	13th	.021	wt20	12th	.028	wt31	14th	.025
Summer work in health field	wt17	10th	.032	wt17	13th	.024	wt34	12th	.027
Require study skills and test anxiety courses	wt9	14th	.017	wt14	14th	.019	wt23	17th	.019
Reduce stress	wt18	9th	.034	wt6	17th	.008	wt24	16th	.019
Give credit for work	wt16	11th	.030	wt3	20th	.004	wt19	18th	.015
Review before exams	wt5	16th	.010	wt8	16th	.011	wt13	19th	.010
Seniors help freshmen	wt5	16th	.010	wt8	16th	.011	wt13	19th	.010
Grade for clinical				wt10	15th	.014	wt10	20th	.008
Employers offer LOAs for school				wt10	15th	.014	wt10	20th	.008

Continued, next page

Question 3, Data Summary, continued

	FQ.F&O	RNK F&O	%WT F&O	FQ.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Make evaluations positive	wt4	17th	.008	wt5	18th	.007	wt9	21st	.007
Equal difficulty each semester	wt9	14th	.017				wt9	21st	.007
Increase faculty in clinical	wt4	17th	.008	wt4	19th	.006	wt8	22nd	.006
Clear program guidelines				wt8	16th	.011	wt8	22nd	.006
Small classes / time for questions	wt3	18th	.006	wt4	19th	.006	wt7	23rd	.006
Personal counselling				wt8	16th	.001	wt8	22nd	.006
Curb competition	wt1	20th	.002	wt5	18th	.007	wt6	24th	.005
Frequent positive progress reports	wt5	16th	.010	wt1	22nd	.001	wt6	24th	.005
Screen for chemical abuse				wt5	18th	.007	wt5	25th	.004
More use of case studies	wt4	17th	.008				wt4	26th	.003
LPNs credit for educ and experience	wt4	17th	.008	wt1	22nd	.001	wt5	25th	.004
Explain nurse role to new students	wt5	16th	.010				wt5	25th	.004
Educational goals in clinical				wt2	21st	.003	wt2	28th	.002
Participate in preceptor program				wt2	21st	.003	wt2	28th	.002
Same advisor long term				wt3	20th	.004	wt3	27th	.002
Alumni to tutor	wt3	18th	.006				wt3	27th	.002
Tape classes for review	wt2	19th	.004				wt2	28th	.005
TOTAL	wt 525			wt718			wt1243		

\* See Note explaining coding on first page of Appendix F.



Rural A, Students' Suggestions for Retention, Question 3							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Max. financial aid	5+ - -	5+	++		+	wt62	1st
Take outside courses 1st	+ - -	+ /	+			wt26	3rd
Study/support groups	+	4+ - -	+	+	+	wt35	2nd
Available, caring and patient faculty	++	++	+	++	-	wt26	3rd
Screen applicants	++	-				wt14	8th
More time to practice skills	++		+++ -		+	wt25	4th
Flexible class and clinical hours	+++	+ -	+			wt26	3rd
Consideration of family needs	+	+	+			wt12	9th
Faculty treat students equally	+	+	+ - -			wt23	5th
Orient students realistically	- /	+	+	+	+	wt20	7th
Tutors for nurses	++	+++ -				wt21	6th
Faculty reassurance for all		+	+		+	wt8	11th
Available childcare		+		+		wt6	12th
Early ID and assist weak students		+ -		+		wt10	9th
Summer work in health field	+	+				wt9	10th
Require study skills and test anxiety courses		+				wt4	14th
Reduce stress			+			wt3	15th
Give credit for work	-		+			wt3	15th
Review before exams	+			+	+	wt8	11th
Seniors help freshmen	+					wt5	13th
Grade for clinical		+ -				wt8	11th
Employers offer LOAs for school			+	+		wt5	13th

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Make evaluations positive	/					wt5	13th
Equal difficulty each semester							
Increase faculty in clinical							
Clear program guidelines		-				wt4	14th
Small classes / time for questions							
Personal counselling		+				wt4	14th
Curb competition					/	wt1	17th
Frequent positive progress reports							
Screen for chemical abuse							
More use of case studies							
LPNs credit for educ and experience					+	wt1	17th
Explain nurse role to new students							
Educational goals in clinical							
Participate in preceptor program				+		wt2	16th
Same advisor long term			-			wt3	15th
Alumni to tutor							
Tape classes for review							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX

Rural E, Students' Suggestions for Retention, Question 3							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Max. financial aid	++ //	+	=/	++ -	+	wt35	1st
Take outside courses 1st	++	/		+	+	wt17	4th
Study/support groups	+	+++ - /			-	wt26	2nd
Available, caring and patient faculty	++ / - -	+-		-		wt35	1st
Screen applicants	++		+/			wt16	5th
More time to practice skills		+				wt8	10th
Flexible class and clinical hours	+++				+	wt16	5th
Consideration of family needs	/	++ -				wt17	4th
Faculty treat students equally	+		++ /	+	+	wt18	3rd
Orient students realistically	+	+	/		++ /	wt15	6th
Tutors for nurses		+/	+			wt11	8th
Faculty reassurance for all	++	+-	+	++	+	wt18	3rd
Available childcare		++	+-			wt14	7th
Early ID and assist weak students	++					wt10	9th
Summer work in health field	+			+	+	wt8	10th
Require study skills and test anxiety courses		+	++			wt10	9th
Reduce stress			/			wt3	12th
Give credit for work							
Review before exams							
Seniors help freshmen			+			wt3	12th
Grade for clinical				+		wt2	13th
Employers offer LOAs for school	+					wt5	12th

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Rural E, Question 3, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Make evaluations positive							
Equal difficulty each semester							
Increase faculty in clinical		+				wt4	13th
Clear program guidelines		+				wt4	13th
Small classes / time for questions				+/		wt4	13th
Personal counselling		+				wt4	13th
Curb competition	+					wt5	12th
Frequent positive progress reports							
Screen for chemical abuse	+					wt5	12th
More use of case studies							
LPNs credit for educ and experience							
Explain nurse role to new students							
Educational goals in clinical				+		wt2	13th
Participate in preceptor program							
Same advisor long term							
Alumni to tutor							
Tape classes for review							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; ( - ) = failed program; ( / ) = failed NCLEX



Urban F, Students' Suggestions for Retention, Question 3							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Max. financial aid	+ - /		+	+	+	wt21	2nd
Take outside courses 1st	+++		++			wt21	2nd
Study/support groups	+	++	++			wt19	3rd
Available,caring and paticnt faculty	+				+	wt6	9th
Screen applicants	+++++					wt25	1st
More time to practice skills		+				wt4	11th
Flexible class and clinical hours							
Consideration of family needs	-	+		+		wt11	5th
Faculty treat students equally	+					wt5	10th
Orient students realistically		++				wt8	8th
Tutors for nurses							
Faculty reassurance for all	++					wt10	6th
Available childcare	-					wt5	10th
Early ID and assist weak students			+			wt3	12th
Summer work in health field		-				wt4	11th
Require study skills and test anxiety courses							
Reduce stress	+	+				wt9	7th
Give credit for work	+ -	-		+		wt16	4th
Review before exams							
Seniors help freshmen	+					wt5	10th
Grade for clinical							
Employers offer LOAs for school							

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Urban F, Question 3, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Make evaluations positive							
Equal difficulty each semester							
Increase faculty in clinical							
Clear program guidelines							
Small classes / time for questions							
Personal counselling							
Curb competition							
Frequent positive progress reports							
Screen for chemical abuse							
More use of case studies							
LPNs credit for educ and experience		+				wt4	11th
Explain nurse role to new students							
Educational goals in clinical							
Participate in preceptor program							
Same advisor long term							
Alumni to tutor							
Tape classes for review							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX

Urban O, Students' Suggestions for Retention, Question 3							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Max. financial aid	++	++	+	+		wt23	3rd
Take outside courses 1st	++ 5 -	5+ /			-	wt64	1st
Study/support groups	-	+ - - - -	+ -	+ - -		wt37	2nd
Available, caring and patient faculty	++	+		- - /	+ -	wt17	5th
Screen applicants	- -	+				wt14	7th
More time to practice skills		- -	++ - -		+	wt21	4th
Flexible class and clinical hours	-	+		+		wt11	10th
Consideration of family needs	+ -	-				wt14	7th
Faculty treat students equally							
Orient students realistically	+ - /					wt15	6th
Tutors for nurses	+		-			wt8	12th
Faculty reassurance for all							
Available childcare	+			+		wt7	13th
Early ID and assist weak students	-		-			wt8	12th
Summer work in health field	+ -	+	+		-	wt13	8th
Require study skills and test anxiety courses	-	-				wt9	11th
Reduce stress			+ - /	-		wt9	11th
Give credit for work							
Review before exams			-	-		wt5	14th
Seniors help freshmen							
Grade for clinical							
Employers offer LOAs for school							

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Make evaluations positive		+				wt4	15th
Equal difficulty each semester		-	-	-		wt9	11th
Increase faculty in clinical		+				wt4	15th
Clear program guidelines							
Small classes / time for questions			-			wt3	16th
Personal counselling							
Curb competition					-	wt1	18th
Frequent positive progress reports	+					wt5	14th
Screen for chemical abuse							
More use of case studies				+ -		wt4	15th
LPNs credit for educ and experience							
Explain nurse role to new students			+	-		wt5	14th
Educational goals in clinical							
Participate in preceptor program							
Same advisor long term							
Alumni to tutor			-			wt3	16th
Tape classes for review				+		wt2	17th
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX



Faculty Contributions to Student Success, Question 4, Data Summary *									
	FQ.F&O	RNK F&O	%WT F&O	FQ..A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Use humor and praise	wt52	2nd	.102	wt79	1st	.134	wt131	1st	.119
More faculty/student involvement	wt39	4th	.077	wt49	2nd	.083	wt88	2nd	.080
Faculty study/support groups	wt59	1st	.116	wt27	6th	.046	wt86	3rd	.078
Relax, be non-judging	wt46	3rd	.091	wt36	4th	.061	wt82	4th	.075
Consider students' family needs	wt30	6th	.059	wt29	5th	.049	wt59	5th	.054
More and varied clinical	wt12	12th	.024	wt44	3rd	.075	wt56	6th	.051
Lecture studyguides	wt31	5th	.061	wt19	10th	.032	wt50	7th	.046
Personal counselling	wt14	10th	.028	wt27	6th	.046	wt41	8th	.037
Tutors available	wt20	8th	.039	wt18	11th	.031	wt38	9th	.035
Encourage to learn, not memorize	wt16	9th	.031	wt20	9th	.034	wt36	10th	.033
Don't overwhelm with paperwork	wt30	6th	.059	wt8	19th	.014	wt38	9th	.035
Don't intimidate	wt21	7th	.041	wt14	13th	.024	wt35	11th	.032
Advisors seekout student early	wt12	12th	.024	wt16	12th	.028	wt28	13th	.026
Be current in nursing practice	wt8	14th	.016	wt21	8th	.036	wt29	12th	.026
Support all, not just the above average	wt5	17th	.010	wt22	7th	.037	wt27	14th	.025
More get-togethers	wt5	17th	.010	wt18	11th	.031	wt23	15th	.021
Intervene early in acad/clin failure	wt14	10th	.028	wt13	14th	.022	wt27	14th	.025
Stress reduct. programs	wt11	13th	.022	wt11	16th	.019	wt22	16th	.020
Flexible testing	wt14	10th	.028	wt3	23rd	.005	wt17	17th	.015
Same expectations	wt11	13th	.022	wt5	21st	.009	wt16	18th	.015
Have great teachers teach the others	wt4	18th	.008	wt12	15th	.020	wt16	18th	.015

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# Question 4, Data Summary, continued

	FQ.F&O	RNK F&O	%WT F&O	FQ.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
More visual aids	wt6	16th	.012	wt9	18th	.015	wt15	19th	.014
More frequent exams	wt13	11th	.026				wt3	20th	.012
Decrease pressure to reduce work hours	wt3	19th	.006	wt10	17th	.017	wt13	20th	.012
Less lecture/ more discussion	wt3	19th	.006	wt9	18th	.015	wt12	21st	.011
More lab practice	wt5	17th	.010	wt6	20th	.010	wt11	22nd	.010
Convenient clin. hours				wt10	17th	.017	wt10	23rd	.009
Review before tests				wt8	19th	.014	wt8	24th	.007
Consider heavy workload	wt4	18th	.008	wt4	22nd	.007	wt8	24th	.007
Calculate more meds	wt3	19th	.006	wt4	22nd	.007	wt7	25th	.006
Do not curve grades				wt5	21st	.008	wt5	27th	.005
TOTALS	wt508			wt589			wt1097		

\* See Note explaining coding on first page of Appendix F.

Rural A, Faculty Contributions to Student Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Use humor and praise	6+ 3 -	+++ /	- /	+	+	wt71	1st
More faculty/student involvement	+++	++	++			wt29	3rd
Faculty study/support groups		+ /	+++			wt17	6th
Relax, be non-judging	++ -	+ -		+	+ -	wt27	4th
Consider students' family needs	++	- -			+	wt18	5th
More and varied clinical	+++ /	+++				wt32	2nd
Lecture studyguides	+		- /	+		wt13	9th
Personal counselling		/	- /			wt8	13th
Tutors available		+ /	++			wt14	8th
Encourage to learn, not memorize	+ /					wt10	11th
Don't overwhelm with paperwork				+ -		wt4	16th
Don't intimidate	+	+	/	-		wt14	8th
Advisors seekout student early		+	+			wt7	14th
Be current in nursing practice	+++				+	wt16	7th
Support all, not just the above average		+	+ -	/		wt12	10th
More get-togethers	+++	++	++			wt29	3rd
Intervene early in acad/clin failure			+			wt3	17th
Stress reduct. programs							
Flexible testing							
Same expectations			+	+		wt5	14th
Have great teachers teach the others							

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
More visual aids	+	+				wt9	12th
More frequent exams							
Decrease pressure to reduce work hours	++					wt10	11th
Less lecture/ more discussion	-				+	wt6	15th
More lab practice							
Convenient clin. hours							
Review before tests			+			wt3	17th
Consider heavy workload							
Calculate more meds							
Do not curve grades							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.							



Rural E, Faculty Contributions to Student Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Use humor and praise		++				wt8	7th
More faculty/student involvement	++	+	++			wt20	1st
Faculty study/support groups		+ -		+		wt10	5th
Relax, be non-judging	+	/				wt9	6th
Consider students' family needs	+ /			+		wt11	4th
More and varied clinical	++			+		wt12	3rd
Lecture studyguides		+		+		wt6	8th
Personal counselling	-		++ //	-		wt19	2nd
Tutors available		+				wt4	10th
Encourage to learn, not memorize	+ -					wt10	5th
Don't overwhelm with paperwork	/					wt4	10th
Don't intimidate	-		++		+	wt12	3rd
Advisors seekout student early	+	+				wt9	6th
Be current in nursing practice	+					wt5	9th
Support all, not just the above average	++					wt10	5th
More get-togethers		+	+	+	+	wt10	5th
Intervene early in acad/clin failure	++					wt10	5th
Stress reduct. programs			++	+ /	+	wt11	4th
Flexible testing				+	+	wt3	11th
Same expectations							
Have great teachers teach the others							

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
More visual aids							
More frequent exams							
Decrease pressure to reduce work hours							
Less lecture/ more discussion			+			wt3	11th
More lab practice	+				-	wt6	8th
Convenient clin. hours	++					wt10	5th
Review before tests	+					wt5	9th
Consider heavy workload		+				wt4	10th
Calculate more meds		-				wt4	10th
Do not curve grades	-					wt5	9th
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.

Urban F, Faculty Contributions to Student Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Use humor and praise		++ -				wt12	5th
More faculty/student involvement	++	+				wt14	4th
Faculty study/support groups		++	+	++	+	wt16	3rd
Relax, be non-judging	++++			+	+	wt23	2nd
Consider students' family needs	+	+	+			wt12	5th
More and varied clinical		+	+			wt7	9th
Lecture studyguides	+ -					wt10	7th
Personal counselling	+	+		+		wt11	6th
Tutors available	++					wt10	7th
Encourage to learn, not memorize	+	+	+			wt12	5th
Don't overwhelm with paperwork	++++	+	+	+	+	wt30	1st
Don't intimidate	+		+		+	wt9	8th
Advisors seekout student early	+					wt5	11th
Be current in nursing practice		+		+		wt6	10th
Support all, not just the above average							
More get-togethers							
Intervene early in acad/clin failure	-					wt5	11th
Stress reduct. programs							
Flexible testing							
Same expectations			++			wt6	10th
Have great teachers teach the others							

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
More visual aids							
More frequent exams							
Decrease pressure to reduce work hours							
Less lecture/ more discussion			+			wt3	13th
More lab practice		+	+			wt7	9th
Convenient clin. hours							
Review before tests							
Consider heavy workload		+				wt4	12th
Calculate more meds							
Do not curve grades							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							

Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.



Urban O, Faculty Contributions to Student Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Use humor and praise	+ - - - -	+ -	++ -	-	+	wt40	2nd
More faculty/student involvement	+	++ -	+ -	-		wt25	3rd
Faculty study/support groups	++ - - -	++ /	-	-	+	wt43	1st
Relax, be non-judging	+++ -		+			wt23	4th
Consider students' family needs	+ -	--				wt18	6th
More and varied clinical		+			+	wt5	15th
Lecture studyguides	+	++ -	-		+	wt21	5th
Personal counselling			+			wt3	17th
Tutors available	+		+	-		wt10	11th
Encourage to learn, not memorize		-				wt4	16th
Don't overwhelm with paperwork							
Don't intimidate	-	+	/			wt12	9th
Advisors seekout student early		+	+			wt7	13th
Be current in nursing practice				+		wt2	18th
Support all, not just the above average	+					wt5	15th
More get-togethers	-					wt5	15th
Intervene early in acad/clin failure	-		-		-	wt9	12th
Stress reduct. programs		+ -	-			wt11	10th
Flexible testing	++	-				wt14	7th
Same expectations	-					wt5	15th
Have great teachers teach the others		-				wt4	16th

Continued, next page

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
More visual aids			--			wt6	14th
More frequent exams		++	-	-		wt13	8th
Decrease pressure to reduce work hours			-			wt3	17th
Less lecture/ more discussion							
More lab practice		-				wt4	16th
Convenient clin. hours							
Review before tests							
Consider heavy workload							
Calculate more meds			-			wt3	17th
Do not curve grades							
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses (+) = passed program; (-) = failed program; (/) = failed NCLEX.							

Contributors to Students' Own Success, Question 5, Data Summary *									
	FQ.F&O	RNK F&O	%WT F&O	FQ..A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Realistic view of program	wt96	2nd	.138	wt88	1st	.126	wt184	1st	.132
Support courses first	wt101	1st	.145	wt53	4th	.076	wt154	2nd	.110
Join study groups	wt62	3rd	.089	wt77	2nd	.110	wt139	3rd	.100
Peer support groups	wt43	7th	.062	wt66	3rd	.094	wt109	4th	.078
Cut down work hours	wt61	4th	.088	wt43	6th	.062	wt104	5th	.074
Work in health field	wt59	5th	.085	wt41	7th	.059	wt100	6th	.072
Keep up with study	wt54	6th	.077	wt35	8th	.050	wt89	7th	.064
Organize time	wt30	8th	.043	wt41	7th	.059	wt71	8th	.051
Need family support	wt43	7th	.062	wt24	13th	.034	wt67	9th	.048
Seek instructor help	wt29	9th	.042	wt25	12th	.036	wt54	10th	.039
Plan finances	wt14	11th	.020	wt29	9th	.041	wt43	11th	.031
Simplify life/plan ahead/trust self	wt14	11th	.020	wt27	11th	.039	wt41	12th	.029
Use tutor/counseling	wt11	12th	.016	wt28	10th	.040	wt39	13th	.028
You must want nursing	wt14	11th	.020	wt23	14th	.033	wt37	14th	.027
Practice relaxation	wt16	10th	.023	wt16	15th	.023	wt32	15th	.023
Keep positive attitude	wt6	14th	.009	wt23	14th	.033	wt29	16th	.021
Tape lectures	wt7	13th	.010	wt11	17th	.016	wt18	17th	.013
Use NCLEX review books throughout program	wt4	15th	.006	wt13	16th	.019	wt17	18th	.012

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Question 5, Data Summary, continued

	FQ.F&O	RNK F&O	%WT F&O	FQ.A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Reduce personal problems	wt11	12th	.016				wt11	19th	.008
Practice in sim. lab	wt2	17th	.003	wt8	18th	.011	wt10	20th	.007
Keep healthy	wt1	18th	.001	wt6	19th	.009	wt7	21st	.005
Attend all classes	wt6	14th	.009				wt6	22nd	.004
Prep for clinical	wt2	17th	.003	wt5	20th	.007	wt7	21st	.005
Resist fear/ failure				wt4	21st	.006	wt4	23rd	.003
Don't quit	wt7	13th	.010				wt7	21st	.005
Arrange childcare	wt3	16th	.004	wt4	21st	.006	wt7	21st	.005
Seniors help fresh.				wt5	20th	.007	wt5	23rd	.004
Take study/reading/ notetaking courses	wt1	18th	.001	wt4	21st	.006	wt5	23rd	.004
TOTALS	wt697			wt699			wt1396		

\* See Note explaining coding on first page of Appendix F.



Rural A, Contributors to Students' Own Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Realistic view of program	7+ -	-		+	- /	wt49	2nd
Support courses first	++ - - /	++	++	+		wt41	3rd
Join study groups	+++ - - -	+	++ /	+		wt53	1st
Peer support groups	+	4+ -	++		+	wt36	5th
Cut down work hours	++ -	/	++	++		wt29	8th
Work in health field	++ -	+ -	++	+ /	+	wt34	6th
Keep up with study	++ - - -			+ -	++	wt31	7th
Organize time	+++ -	++ -	-	+		wt37	4th
Need family support		+				wt4	15th
Seek instructor help		+ - -	-			wt15	10th
Plan finances		+	+		++	wt9	11th
Simplify life/plan ahead/trust self			+			wt3	16th
Use tutor/counseling		++++	+		-	wt20	9th
You must want nursing	+ /		-		+ /	wt15	10th
Practice relaxation			+		+	wt4	15th
Keep positive attitude	-	+	/	/	+	wt15	10th
Tape lectures	+		-			wt8	12th
Use NCLEX review books throughout program		+		+		wt6	13th

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Reduce personal problems							
Practice in sim. lab			-			wt3	6th
Keep healthy	+					wt5	14th
Attend all classes							
Prep for clinical		+				wt4	15th
Resist fear/ failure		+				wt4	15th
Don't quit							
Arrange childcare		+				wt4	15th
Seniors help fresh.							
Take study/reading/ notetaking courses							
Priority wt. 1st + 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses: (+) = passed program; (-) = failed program; (/) = failed NCLEX							

Rural E, Contributors to Students' Own Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Realistic view of program	++ - 3/	+	/	+		wt39	1st
Support courses first	+	-	+			wt12	7th
Join study groups	++	+ -	++ /			wt24	3rd
Peer support groups	+++ -		+	+ //	+	wt30	2nd
Cut down work hours	/		+ -	-	/	wt14	6th
Work in health field			-	+ -		wt 7	10th
Keep up with study	-	+++			+	wt18	5th
Organize time		/				wt4	12th
Need family support	+ /	+	+ -			wt20	4th
Seek instructor help		+ -			+ -	wt10	8th
Plan finances	+ /	+		+ -	- /	wt20	4th
Simplify life/plan ahead/trust self	+++	+	+	+		wt24	3rd
Use tutor/counseling			++	/		wt8	9th
You must want nursing	+		-			wt8	9th
Practice relaxation		+ /	+		+	wt12	7th
Keep positive attitude		+ -				wt8	9th
Tape lectures			+			wt3	13th
Use NCLEX review books throughout program		+		+	+	wt7	10th

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Reduce personal problems			+			wt3	13th
Practice in sim. lab			+	+		wt5	11th
Keep healthy					+	wt1	14th
Attend all classes							
Prep for clinical					+	wt1	14th
Resist fear/ failure							
Don't quit							
Arrange childcare							
Seniors help fresh.	+					wt5	11th
Take study/reading/ notetaking courses			+		+	wt4	12th
Priority wt. 1st = 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses: (+) = passed program; (-) = failed program; (/) = failed NCLEX							



Urban F, Contributors to Students' Own Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Realistic view of program	+++	+	+		+	wt23	5th
Support courses first	7+ -	+++				wt52	1st
Join study groups	+ -	++		++	++	wt24	4th
Peer support groups		+	+	++	+	wt12	9th
Cut down work hours	+ /	++ -	++++ /		+	wt38	2nd
Work in health field	++	++	+		/	wt22	6th
Keep up with study	++	+ /	+ -		++	wt26	3rd
Organize time	+	++			+	wt14	7th
Need family support		+ - /	+++		+	wt22	6th
Seek instructor help		+		+		wt6	12th
Plan finances				+		wt2	14th
Simplify life/plan ahead/trust self	/	+			+	wt10	10th
Use tutor/counseling							
You must want nursing							
Practice relaxation	+			++ -	++	wt13	8th
Keep positive attitude							
Tape lectures							
Use NCLEX review books throughout program				+		wt2	14th

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	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Reduce personal problems		+	+			wt7	11th
Practice in sim. lab							
Keep healthy					+	wt1	15th
Attend all classes		+		+		wt6	12th
Prep for clinical							
Resist fear/ failure							
Don't quit		+	+			wt7	11th
Arrange childcare			+			wt3	13th
Seniors help fresh.							
Take study/reading/ notetaking courses							
Priority wt. 1st + 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses: (+) = passed program; (-) = failed program; (/) = failed NCLEX							

Urban O, Contributors to Students' Own Success							
	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Realistic view of program	8+ 4-	++	/		+ -	wt73	1st
Support courses first	3+ 3 - /	+++		+		wt49	2nd
Join study groups	+++	-	++ - - -	+ -		wt38	3rd
Peer support groups	- - -		++ - - -		+	wt31	4th
Cut down work hours	++ -	-		+ /		wt23	7th
Work in health field	/	++ - /	+++ -	- -		wt37	4th
Keep up with study	+ -	++ - -		-		wt28	5th
Organize time	++		++			wt16	9th
Need family support	- -	+ -			++ /	wt21	8th
Seek instructor help	+	- -	-	+ - -	+	wt23	7th
Plan finances		+++				wt12	11th
Simplify life/plan ahead/trust self		-				wt4	15th
Use tutor/counseling	-		++			wt11	12th
You must want nursing		- /	- -			wt14	10th
Practice relaxation			-			wt3	16th
Keep positive attitude	+				-	wt6	14th
Tape lectures			+ -		-	wt7	13th
Use NCLEX review books throughout program					-	wt2	17th

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Urban O, Question 5, continued

	1st	2nd	3rd	4th	5th	TOTAL	PRIORITY
Reduce personal problems		-				wt4	15th
Practice in sim. lab				-		wt2	17th
Keep healthy							
Attend all classes							
Prep for clinical				-		wt2	17th
Resist fear/ failure							
Don't quit							
Arrange childcare							
Seniors help fresh.							
Take study/reading/ notetaking courses					-	wt1	18th
Priority wt. 1st + 5; 2nd = 4; 3rd = 3; 4th = 2; 5th = 1.							
Student responses: (+) = passed program; (-) = failed program; (/) = failed NCLEX							



Students' Predictors of Nursing Program Success, Question 6, Data Summary *									
	FQ.F&O	RNK F&O	%WT F&O	FQ..A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
Peer study groups	wt270	1st	.111	wt250	1st	.103	wt52;0	1st	.107
Peer tutoring	wt270	1st	.111	wt242	3rd	.099	wt512	2nd	.105
Peer support groups	wt246	2nd	.101	wt243	2nd	.100	wt489	3rd	.100
Pre-admission Interview	wt224	3rd	.092	wt241	4th	.099	wt465	4th	.095
Pre-nursing QPA	wt216	4th	.089	wt189	7th	.078	wt405	5th	.083
Previous college experience	wt190	6th	.078	wt217	5th	.089	wt407	5th	.083
Age	wt182	8th	.075	wt201	6th	.082	wt383	6th	.079
Natural Science (college) QPA	wt192	5th	.079	wt189	7th	.078	wt381	7th	.078
NLN Prenurse exam	wt189	7th	.077	wt179	9th	.073	wt368	8th	.075
High school rank	wt169	9th	.069	wt182	8th	.075	wt351	9th	.072
SAT scores	wt159	10th	.065	wt159	10th	.065	wt318	10th	.065
ACT scores	wt132	11th	.054	wt145	11th	.059	wt277	11th	.057
TOTALS	wt2439			wt2437			wt4876		
* For coding, see first page of Appendix F.									

Rural A, Students' Predictors of Nursing Program Success						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
Peer study groups	11+ 8 - /	8+ -	++	+ - -	wt148	1st
Peer tutoring	9+ 7 - /	9+ -	4+ - -	-	wt145	2nd
Peer support groups	9+ 8 -	7+	+++	- - -	wt143	3rd
Pre-admission Interview	9+ 6 -	5+ 4 -	7+ -	+ -	wt139	4th
Pre-nursing QPA	+++ - - -	9+ 4 -	8+	++	wt11	9th
Previous college experience	8+ - -	8+ 4 - /	6+ - -	-	wt128	5th
Age	6+ -	5+ 4 - /	8+ - - -	++ - - -	wt114	7th
Natural Science (college) QPA	++ - - - -	10+ - - -	6+ - -	+ -	wt110	10th
NLN Prenurse exam	++ - - -	9+ - -	6+ 5 -	++++ -	wt112	8th
High school rank	+ - - -	6+ 4 -	12+ -	+++ - - -	wt115	6th
SAT scores	-	++ - -	15+ 4 -	4+ 4 -	wt94	11th
ACT scores		6+ - - -	10+ - - -	++ - - - -	wt87	12th
<p>Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2.</p> <p>Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.</p>						

Rural E, Students' Predictors of Nursing Program Success						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
Peer study groups	10+ - //	3+ 2 - //	+ - /		wt102	1st
Peer tutoring	8+ - /	5+ - - /	+ - ///		wt97	3rd
Peer support groups	9+ - - //	5+ - //	/		wt100	2nd
Pre-admission Interview	9+ - - /	3+ 3 - 3 /	+ -		wt102	1st
Pre-nursing QPA	+ -	7+ - 4 /	++++ - /		wt76	7th
Previous college experience	++++	4+ 3 - //	6+ - - 3 /		wt89	4th
Age	5+ - //	++ - - /	5+ - /	+ - /	wt87	5th
Natural Science (college) QPA	+ //	8+ - - /	++++ - /	/	wt79	6th
NLN Prenurse exam	++ -	7+ - - /	++	+ //	wt67	8th
High school rank	+	4+ - /	7+ - - /	+ - //	wt67	8th
SAT scores		5+ /	6+ 3 - //	++ //	wt65	9th
ACT scores		4+ - /	7+ - - /	//	wt58	10th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						

Urban F, Students' Predictors of Nursing Program Success						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
Peer study groups	10+ - -	6+ //	+++		wt101	1st
Peer tutoring	7+ -	7+ - /	+++ /		wt98	2nd
Peer support groups	10+	++ - -	+++		wt85	3rd
Pre-admission Interview	+++ /	8+ - - /	++++	++	wt80	4th
Pre-nursing QPA	+ -	8+ /	++++ - /		wt77	6th
Previous college experience	++++	7+ - - /	+++ /	+++	wt78	5th
Age	+++ -	8+ - -	+++ /	+++	wt74	7th
Natural Science (college) QPA	7+ - - /	7+ /	+		wt66	9th
NLN Prenurse exam	++	9+ //	+		wt73	8th
High school rank	/	++++	7+ - - /	6+	wt63	10th
SAT scores	5+ - -	4+ //	8+		wt62	11th
ACT scores	+++	8+ - - /	+++++		wt55	12th
<p>Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2.</p> <p>Student responses: (+) = passed program; (-) = failed program; (/) = failed NCLEX.</p>						



Urban O, Students' Predictors of Nursing Program Success						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
Peer study groups	14+ 13 - //	++ /	++ --	+	wt169	2nd
Peer tutoring	13+ 13 - //	++++ /	++ --		wt172	1st
Peer support groups	12+ 13 - //	++++ /	++	+	wt161	3rd
Pre-admission Interview	7+ 6 - /	7+ 6 - /	++++ - /		wt144	4th
Pre-nursing QPA	++ ---- /	13+ 9 - /	+++ /	++ -	wt139	5th
Previous college experience	+++++ -	8+ 6 - //	++ --- /	++ ----	wt112	7th
Age	5+ -- /	8+ 5 - /	+ -- /	5+ 4 -	wt108	8th
Natural Science (college) QPA	++ --- /	14+ 6 - /	--- /	+++ -	wt126	6th
NLN Prenurse exam	+ ---	6+ 5 - /	10+ 4 -	+ --	wt116	6th
High school rank	++ --	6+ - /	9+ 7 - //	++ ----	wt106	9th
SAT scores	-	7+ --- /	8+ 7 - /	4+ 3 - /	wt97	10th
ACT scores	+ -	4+ ---	6+ 4 - 3 /	+++ ---	wt77	11th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						

Students' Predictors of Success on NCLEX, Question 7, Data Summary *									
	FQ.F&O	RNK F&O	%WT F&O	FQ..A&E	RNK A&E	%WT A&E	FQ4SCH	RNK4SCH	%WT4SCH
NCLEX Review Course	wt221	1st	.236	wt191	1st	.230	wt412	1st	.233
NLN Achievement Test	wt197	3rd	.210	wt189	2nd	.227	wt386	2nd	.219
Nursing Cumulative QPA	wt198	2nd	.211	wt184	3rd	.221	wt382	3rd	.216
Mosby Assess Test	wt174	4th	.186	wt159	4th	.191	wt333	4th	.188
Smith Computer Review	wt147	5th	.151	wt109	5th	.131	wt256	5th	.145
* For coding, see first page of Appendix F.									

Rural A, Students' Predictors of Success on NCLEX						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
NCLEX Review Course	7+ 4 -	6+ 3 - /	6+		wt113	3rd
NLN Achievement Test	7+ 4 -	9+ - - -	5+ /		wt121	1st
Nursing Cumulative QPA	+++ -	12+ 5 -	++++ - /		wt116	2nd
Mosby Assess Test	+ - - - -	6+ - - /	11+ -		wt97	4th
Smith Computer Review	- -	5+ -	10+ - - /		wt73	5th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						

Rural E, Students' Predictors of Success on NCLEX						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
NCLEX Review Course	9+ -	2+ 3 - 3 /	+ -		wt78	1st
NLN Achievement Test	4+ -	4+ - - /	++ - //	+ -	wt68	2nd
Nursing Cumulative QPA	5+ -	++ - - /	4+ //	/	wt68	2nd
Mosby Assess Test	6+	+++ - /	++ - /	/	wt62	3rd
Smith Computer Review	+	+++ /	4+ /	+ /	wt36	4th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						

Urban F, Students' Predictors of Success on NCLEX						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
NCLEX Review Course	6+ - /	++++ -	+++ -		wt72	2nd
NLN Achievement Test	+++ - /	6+ -	++++ /		wt68	4th
Nursing Cumulative QPA	5+	6+ - - /	+++ /		wt73	1st
Mosby Assess Test	+++ -	7+ /	++ - /		wt69	3rd
Smith Computer Review		++++ - /	++++ - /	+	w42t	5th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						

Urban O, Students' Predictors of Success on NCLEX						
	1st	2nd	3rd	4th	TOTAL	PRIORITY
NCLEX Review Course	8+ 7 - /	9+ 4 - //	++ -		wt149	1st
NLN Achievement Test	4+ 4 -	8+ 4 - //	6+ 4 - /		wt129	2nd
Nursing Cumulative QPA	5+ - -	8+ 7 - 3 /	++++ - -	+ -	wt125	3rd
Mosby Assess Test	+ - - -	8+ 2 - 3 /	5+ 6 -		wt105	4th
Smith Computer Review	5 -	5+ 3 - 2 /	9+ 5 - /		wt105	4th
Priority wt. 1st (very useful) = 5; 2nd (useful) = 4; 3rd (some use) = 3; 4th (no use) = 2. Student responses: (+) = passed program; ( - ) = failed program; (/) = failed NCLEX.						



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